

MARINE REVIEW.

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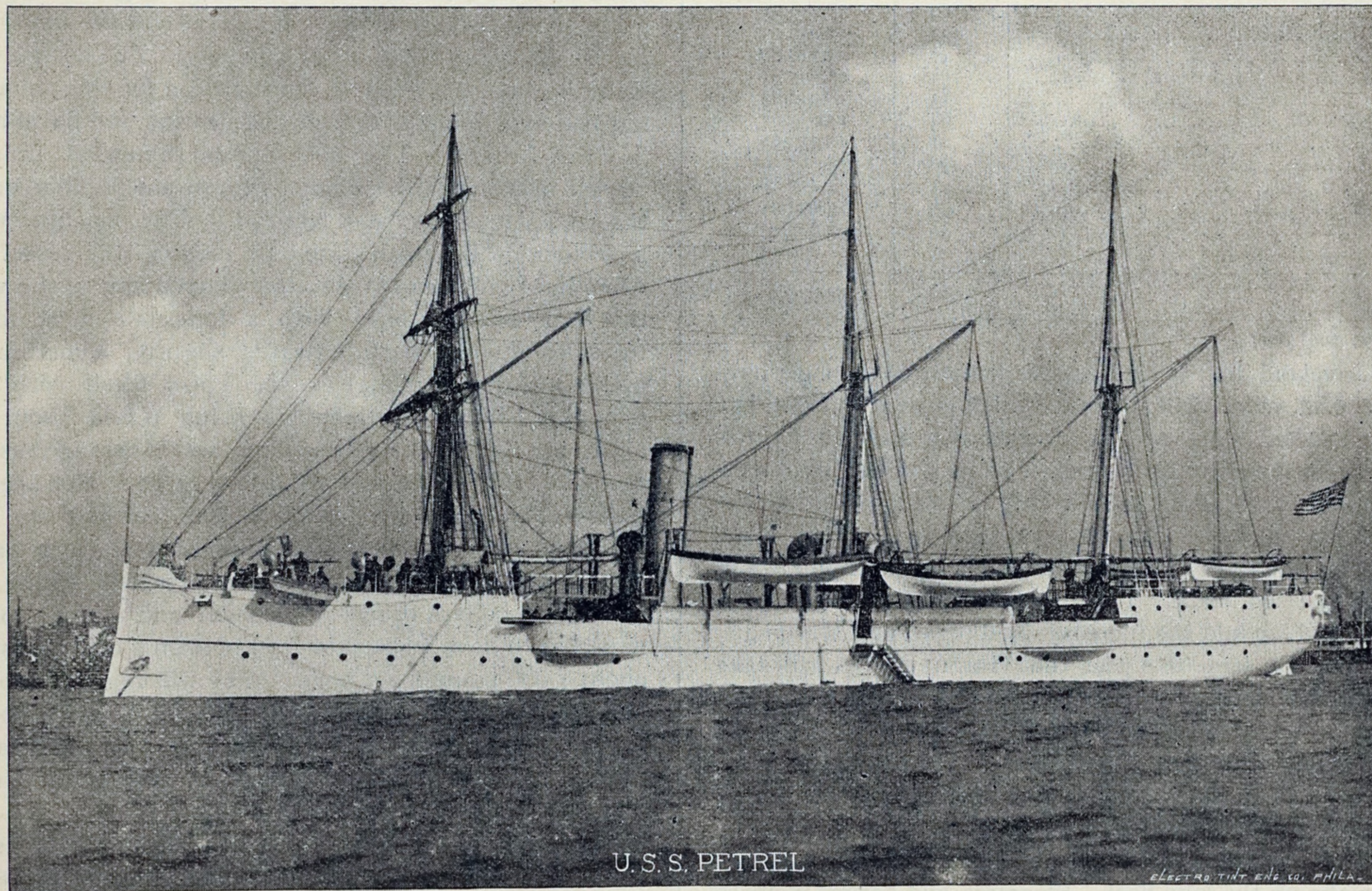
No. 13.

Gunboat Petrel, United States Navy.

The accompanying illustration of the United States gunboat Petrel is from the Railroad and Engineering Journal of New York. "While of course not equal in weight of fighting power to the larger cruisers" says the Journal, "this ship is one of a class which is very useful on several of the foreign stations and very efficient. In case of war these vessels might prove excellent auxiliaries to the larger boats. The Petrel was built under contract by the Columbia Iron Works in Baltimore. The contract was let in December, 1886, and the vessel was finally accepted by the navy department in October, 1889. Since then she has

mounted in sponsons, two on each side, at a height of 10 feet 8 inches above the water-line, and fitted with segmental steel shields. The secondary battery includes two 6-pounder rapid-fire guns, and two revolving cannon. The armament is a heavy one for a ship of this size.

The Petrel is propelled by a single screw; it is three-bladed, 9 feet 9 inches in diameter, with a mean pitch of 12 feet 3 inches. The screw is driven by a two-cylinder horizontal compound engine, with cylinders 25 inches and 46 inches in diameter and 33 stroke. Steam is furnished by two cylindrical boilers 8 feet 8 inches in diameter and 18 feet 4½ inches long. The total grate



been in commission in service of different kinds, and is now on her way to join the China squadron, for service in which she is particularly adapted.

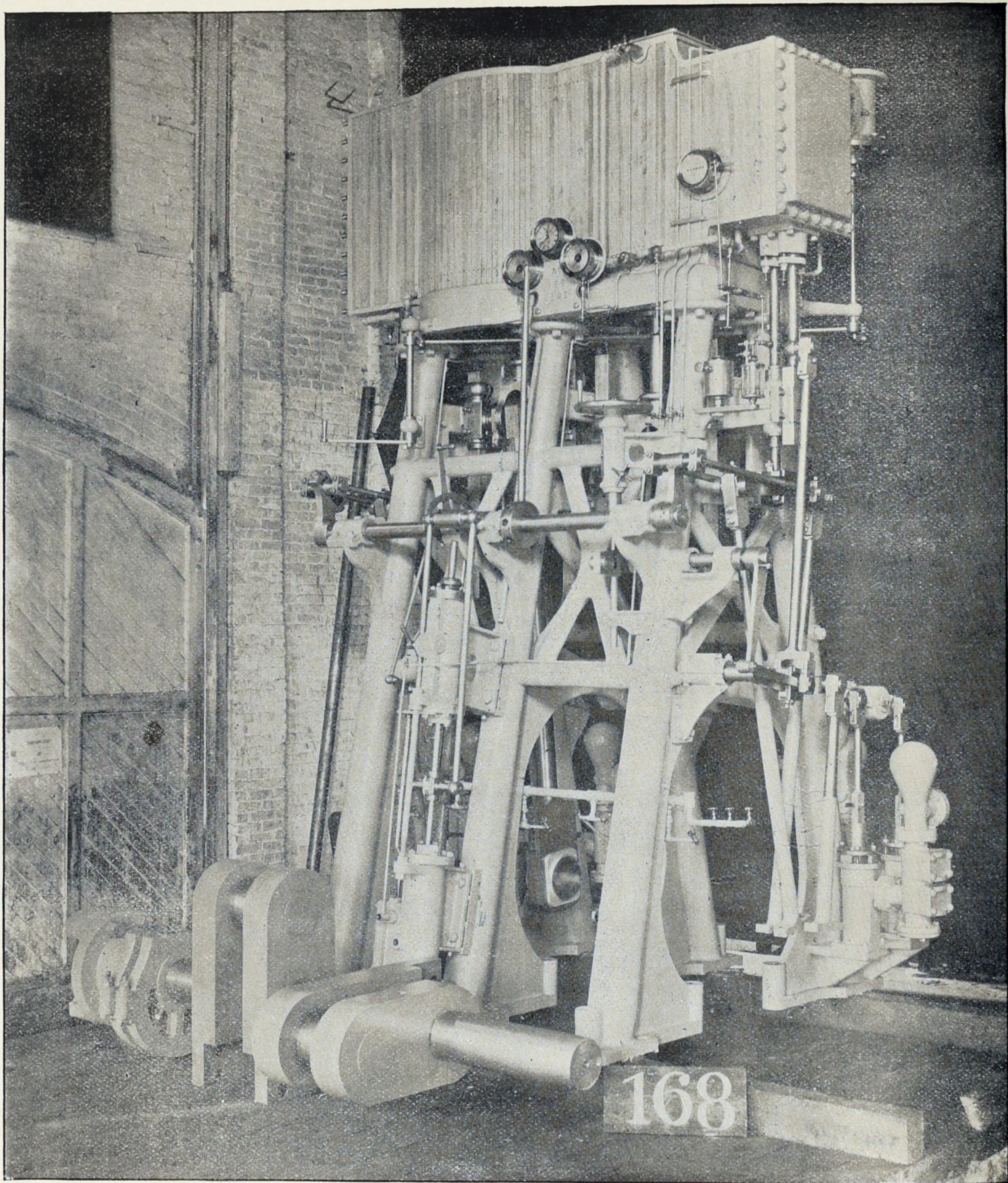
The general dimensions of this vessel are: Length between perpendiculars, 175 feet; beam, 31 feet; depth of hold, 15 feet 7 inches; mean draft, 11 feet 7 inches; displacement, 870 tons. She has three masts, with a barkentine rig, and a considerable spread of canvas. The hull is of steel, and is divided by nine transverse water-tight bulkheads. The engine and boiler space is surrounded and covered as completely as possible by the coal bunkers, which are divided into compartments, which can be separately flooded and drained. Further protection is afforded by a steel deck three-eighths of an inch thick, which curves from a height of 8 inches above the water-line at the crown to 2 feet 6 inches below at the sides.

The armament consists of four 6-inch breech-loading guns

area is 83.2 square feet, and the heating surface 2,796 square feet. On a four-hour's trial trip, with 89 pounds pressure in the boilers, the engines developed an average of 1,095 horse power and the average speed was 11.8 knots. Under forced draft the maximum power developed was 1,513 horse power.

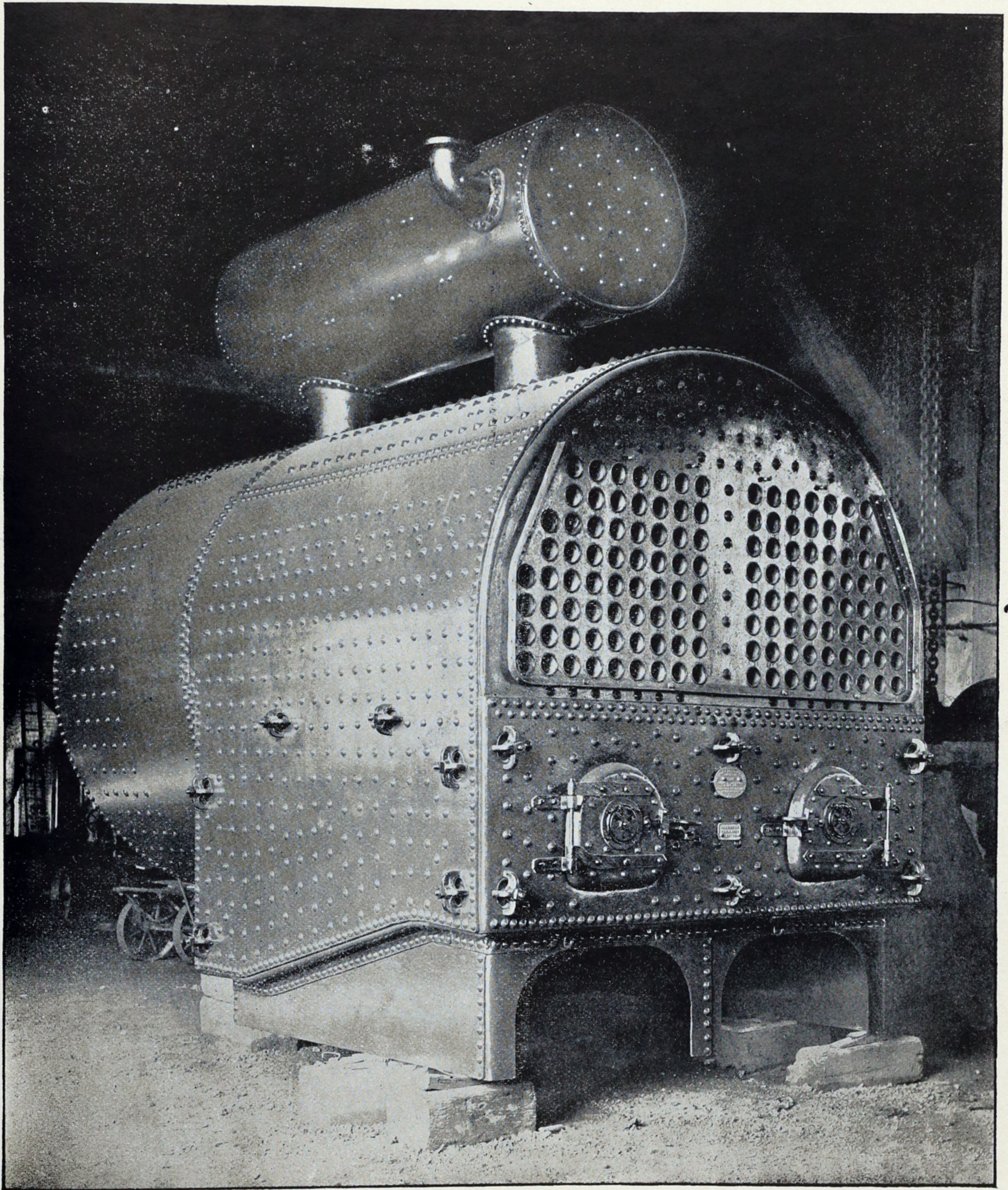
Machinery of the Steamer John J. Hill.

In the elegant supplemental engravings accompanying this issue the engines and boiler of the steamer John J. Hill, a vessel built on the lakes for coast service, are represented. They were built by the Dry Dock Engine Works of Detroit, which is operated in conjunction with the Detroit Dry Dock Company. The boat is 178 feet long, 40 feet beam and 17 feet hold. The engines are fore and aft compound, 20 and 40 inches by 36 inches stroke. The boiler is 9 feet in diameter and 14 feet long, allowed 110 pounds pressure, and the boat in all her parts is built after the United States standard rules.



Built by the DRY DOCK ENGINE WORKS, Detroit, Mich.

ENGINE AND BOILER DR



Detroit, Mich.

Supplement to MARINE REVIEW, Cleveland, Ohio.

BOILER FOR STEAMER J. J. HILL.

Tonnage of Lake Customs Districts.

The table below was condensed from figures in the annual report of the commissioner of navigation for the year ending June 30, 1891, and shows how the ownership of the lake fleet is distributed in the different custom districts of the lakes. A similar table was prepared from the report of 1890 and some valuable deductions may be drawn from a comparison of them. The report of 1891 shows that 3,600 vessels of 1,154,870.38 gross tons are owned on the lakes. In 1890 there were only 3,510 vessels and the total tonnage was 1,063,063.90. Ninety craft, sixty-five of which were steam, have been added to the lake fleet in the year ending June 30, 1891, and the increase in tonnage amounts to 91,806,48 gross tons.

CUSTOMS DISTRICT IN WHICH DOCUMENTED.	NUMBER.	TONNAGE.
Cuyahoga, (Cleveland).....	256	209,542.98
Buffalo Creek.....	315	160,668.38
Huron, (Port Huron).....	441	153,382.27
Detroit.....	292	150,335.12
Milwaukee.....	395	105,485.26
Chicago.....	332	73,999.45
Champlain.....	*592	56,871.73
Superior, (Marquette).....	141	52,254.00
Sandusky.....	89	41,193.21
Michigan, (Grand Haven).....	293	32,050.03
Erie.....	46	29,740.00
Oswegatchie.....	55	26,685.64
Oswego.....	113	18,042.89
Miami, (Toledo).....	63	17,053.62
Niagara.....	21	10,252.93
Vermont.....	40	5,983.72
Genesee.....	*24	4,259.00
Cape Vincent.....	50	3,692.21
Duluth.....	35	2,678.49
Dunkirk.....	7	699.45
	3,600	1,154,870.38

* Mostly canal boats.

The Cleveland district leads in the amount of tonnage, having 30 per cent. more than Buffalo, which is next in rank, but from 50 to 150 less boats than the five leading districts that follow. The most remarkable increase is shown by the figures for the Huron district, 17,355.92 tons having been added to that district, while the number of crafts decreased two. This is accounted for by the heavy investments of Michigan capitalists in new and large sized boats. This district crowds Detroit out of third place, and should the increase in Buffalo and Huron districts continue the same this year the Huron district will take second position instead of Buffalo, as the Huron district has as much tonnage this year as Buffalo had last year. The increase of the six greatest districts is as follows: Huron, 17,355 tons; Cleveland 16,302 tons; Detroit 12,975 tons; Milwaukee 12,630 tons; Buffalo 7,440 tons; Chicago 2,035 tons.

Below will be found a statement of the different classes of craft that make up the lake fleet. Steamers and barges increase but the sail craft decreases 10 per cent. in tonnage and twenty-nine of them have been lost or gone out of commission. At that rate the sail fleet of the lakes will disappear in ten years, a prediction that may be safely made. The abnormal increase of barge tonnage on the lakes may be accounted for by the whale-back fleet.

CLASS.	June 30, 1890.		June 30, 1891.		Tonnage increase per cent.
	No.	Gross tons.	No.	Gross tons.	
Steam vessels.....	1,527	652,922.25	1,592	736,751.53	12.6
Sailing vessels.....	1,272	328,655.96	1,243	325,131.06	*10.0
Canal boats.....	657	67,574.90	703	72,515.42	7.3
Barges.....	54	13,910.09	62	20,472.37	47.1
	3,510	1,063,063.90	3,600	1,154,870.38	

* Decrease.

Send 75 cents to the MARINE REVIEW for a binder that will hold 25 numbers.

To Build Another Monitor.

As soon as the second monitor building for the Lake Superior Iron Company is launched, the Cleveland Ship Building Company will put down the keel for a third steamer of this class. She will be 315 feet over all, 300 feet keel, 42 feet beam, and 24 feet deep, having a dead weight carrying capacity of 3,666 tons, including fuel, on 16 foot draft. The engines will be the regular Cleveland triple expansion type and will drive the steamer 11½ miles an hour loaded and 12 miles light. The name of the owners can not be given, in fact it may be one of four parties who are figuring on the steamer, but in any event it will be built, for if no contract is made the Cleveland company will build her on their own account. The boat will be ready for sea some time in July and will, if anything like the present freights prospects culminate, be a money maker. All the features of the Lake Superior Company's monitors, except the extreme curve of the fore-foot will be included. Monitor seems to find more favor than whale-back as a name for this type of vessels, it having been adopted by Canadian builders.

Canadian Monitors.

The John Doty Engine Company of Toronto has begun work on a steel steamer of the monitor type, to engage in the grain and coal trade between Kingston and the upper lake ports for the Canadian Steel Barge Company. The design is by W. E. Redway, superintendent of construction for this company, who has had experience in marine engineering and naval architecture in Great Britain. The boat differs somewhat from the cargo vessels building in Cleveland, Detroit and Buffalo, and to which the same name has been applied. The machinery is placed nearly amidships, with a view to making the vessel trim better when light. Instead of the cigar-shaped bow of the whalebacks, this boat has a ram bow, with a fore-castle deck forward, the top sides of which flare outwards slightly, something like the mould board of a plough. She is also fitted with seven self-trimming hatches, the openings being raised about three feet above the top of the rounded deck, and so arranged as to be easily accessible for loading and unloading cargo. Her keel is 225 feet (full Welland canal size), beam 38 feet and hold 20 feet. She will be fitted with fore and aft compound engines, having cylinders 26 and 50 inches diameter and 40 inches stroke, with two cylindrical boilers 12 feet in diameter and 11 feet long, and is expected to have a speed of 13 knots on a coal consumption of about 1,000 pounds per hour. She will register about 850 tons and will have a carrying capacity of about 2,200 tons of dead weight, on about 15 feet draft of water. Mr. Redway claims to have secured patents on his design in Canada, the United States and several foreign countries.

In addition to the monitor, the Toronto company have on the stocks a steel side-wheel passenger steamer of 180 feet keel for the St. Catharines-Toronto route. They are also constructing for George Gooderham, Esq., a well known distiller, a steel yacht from designs furnished by Watson, the celebrated designer of Glasgow, Scotland. This yacht will be 119 feet keel, fitted with triple expansion engines of high power, and water tube boilers to carry 200 pounds steam pressure. She is expected to be very speedy.

The Polson Iron Works of Toronto, having a shipbuilding and dry dock plant at Owen Sound, Ont., has also prepared plans for a vessel similar to the monitors being built by the Cleveland Ship Building Company. The plans were gotten up for a Swedish firm but no contract has been secured as yet. This company is also building three vessels for the Dominion government.

Send 20 cents in stamps for Tabulated Statement showing Lake Superior ore production for 1891, and the past 36 years.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 80 00
Champion Iron Company.....	25 00	.....	70 00
Chandler Iron Company.....	25 00	45 50	48 50
Jackson Iron Company.....	25 00	.....	105 00
Lake Superior Iron Company.....	25 00	.....	51 00
Minnesota Iron Company.....	100 00	77 50	79 50
Pittsburg Lake Angeline Iron Co.....	25 00	150 00	175 00
Republic Iron Company.....	25 00	21 50	23 00
Ashland.....	25 00	.....	51 00
Section Thirty-three.....	25 00	.....	8 00
Brotherton.....	25 00	2 00	2 75
Iron Belt.....	25 00	2 25	2 50

About 100 companies with an aggregate capital authorized by incorporation rights of about \$200,000,000 have been organized since the Mesaba boom was started. A few leaders in Duluth, St. Paul and Minneapolis are interested in the larger portion of the companies. The Duluth & Iron Range Railway is negotiating with contractors for the construction of a branch to a few of the prospects that give promise of shipping some ore during the coming season or early in 1893.

At the Chapin mine there is about 200,000 tons of ore on the surface and space for stock piles is crowded so that the working force at the mine has been materially reduced. With the opening of navigation a full working force may again be put on but the condition of the ore market will undoubtedly have most to do with determining action in this regard. The mine is now producing about 1,200 tons a day and "dead work" is going on without interruption.

The Illinois Steel Company, which has taken the entire product of the Monitor mine, Crystal falls, for some time past, now controls that property as well as the Paint River in the same district. The former owners of the Monitor had been involved in financial troubles over property.

No. 4 shaft at the Chandler, 7½x16 feet in the clear, was sunk 116 feet in February. Since the fire the mine has been hoisting about 1,000 tons a day.

River and Harbor Appropriations.

Notwithstanding the opposition of Congressman Whiting and Weadock of Michigan, the bill reported to Congress by the river and harbor committee contains an appropriation of \$400,000 for the beginning of work on the channel of 20 and 21 feet in the connecting waters of the lakes. If the bill is passed as reported by the committee the lakes will get about \$750,000 more than they had from the last Congress. The bill appropriates altogether \$20,700,000, which is about \$300,000 less than the amount covered by the bill reported by the committee in the last Congress, and nearly \$4,000,000 less than the amount of the bill which became a law in the last Congress.

Following is a list of appropriations of \$10,000 and over for lake harbors:

New York—Buffalo, \$300,000; Dunkirk, \$20,000; Charlotte, \$25,000; Ogdensburg, \$40,000; Owego, \$30,000.

Pennsylvania—Erie, \$40,000.

Ohio—Ashtabula, \$70,000; Cleveland, \$100,000; Fairport, \$35,000; Huron, \$15,000; Port Clinton, \$10,000; Sandusky City, \$41,712; Toledo, straight channel through Maumee Bay, \$200,000; Conneaut, \$25,000.

Indiana—Michigan City, outer harbor, \$30,000; inner harbor, \$15,000.

Illinois—Calumet harbor, to maintain existing work, \$15,000; Chicago, \$72,000; Waukegan, \$25,000.

Michigan—Charlevoix harbor, \$10,000; Frankfort, \$10,000; Grand Haven, \$40,000; Grand Marais, refuge, \$30,000; Manistee, \$50,000; Muskegon, \$75,000; Ontonagon, \$20,000; Sand Beach, refuge, \$150,000; St. Joseph, \$50,000; South Haven \$10,000; Marquette, \$80,000; Petoskey, \$20,000.

Wisconsin—Green Bay, \$10,000; Kenosha, \$15,000; Kewaunee, \$20,000; Manitowoc, \$18,000; Milwaukee, refuge, \$75,000; Milwaukee harbor, \$14,000; Racine, \$25,000; Superior bay and St. Louis bay, \$70,000; Sheboygan, \$20,000; Ashland, \$45,000.

Minnesota—Duluth, \$80,000; Grand Marais, \$10,000; Agate bay, \$30,000.

Opening of the Straits and Canals.

Last spring a general opening of navigation was delayed on account of the dull outlook in freight matters and it would seem now as though the weather will not permit this spring of an opening even as early as that of a year ago. Vessels will move as early as possible on account of paying grain freights offered all winter. Dates of the opening of the different connecting waterways for a long period of years past are as follows:

STRAITS OF MACKINAC.

1891.....April 20	1879.....April 22	1867.....April 23
1890.....April 8	1878.....Mch 15	1866.....April 28
1889.....April 6	1877.....April 18	1865.....April 21
1888.....May 4	1876.....April 28	1864.....April 28
1887.....April 24	1875.....April 28	1863.....April 17
1886.....April 21	1874.....April 29	1862.....April 18
1885.....May 5	1873.....May 1	1861.....April 25
1884.....April 25	1872.....April 28	1860.....April 13
1883.....April 28	1871.....April 2	1859.....April 3
1882.....April 3	1870.....April 18	1858.....April 5
1881.....May 3	1869.....April 28	
1880.....April 4	1868.....April 19	

ST. MARY'S FALLS CANAL.

Opened.	Closed.	Opened.	Closed.
1891.....April 27	Dec. 7	1872.....May 11	Nov. 26
1890.....April 20	Dec. 3	1871.....May 8	Nov. 29
1889.....April 15	Dec. 4	1870.....April 29	Dec. 1
1888.....May 7	Dec. 4	1869.....May 4	Nov. 29
1887.....May 1	Dec. 20	1868.....May 2	Dec. 3
1886.....April 25	Dec. 4	1867.....May 4	Dec. 3
1885.....May 6	Dec. 2	1866.....May 5	Dec. 3
1884.....April 23	Dec. 10	1865.....May 1	Dec. 3
1883.....May 2	Dec. 11	1864.....May 2	Dec. 4
1882.....April 21	Dec. 3	1863.....April 28	Nov. 24
1881.....May 7	Dec. 5	1862.....April 27	Nov. 27
1880.....April 28	Nov. 15	1861.....May 3	Nov. 14
1879.....May 2	Dec. 3	1860.....May 11	Nov. 26
1878.....May 8	Dec. 3	1859.....May 13	Nov. 28
1877.....May 2	Nov. 30	1858.....April 18	Nov. 20
1876.....May 3	Nov. 26	1857.....May 9	Nov. 30
1875.....May 12	Dec. 2	1856.....May 4	Nov. 28
1874.....May 12	Dec. 3	1855.....June 18	Nov. 23
1873.....May 5	Nov. 12		

WELLAND CANAL.

Opened.	Closed.	Opened.	Closed.
1890.....April 15	Dec. 10	1877.....April 17	Dec. 5
1889.....April 16	Dec. 1	1876.....April 17	Dec. 15
1888.....April 23	Dec. 8	1875.....May 3	Dec. 14
1887.....May 3	Dec. 10	1874.....April 9	Dec. 10
1886.....April 19	Dec. 1	1873.....April 11	Nov. 29
1885.....May 7	Dec. 9	1872.....April 22	Dec. 10
1884.....April 23	Nov. 30	1871.....April 6	Dec. 1
1883.....April 5	Dec. 12	1870.....April 19	Dec. 18
1882.....April 30	Dec. 5	1869.....April 20	Dec. 11
1881.....May 2	Nov. 19	1868.....April 15	Dec. 6
1880.....April 20	Nov. 30	1867.....April 17	Dec. 19
1879.....May 5	Dec. 5	1866.....April 17	Dec. 16
1878.....May 7	Dec. 14		

The Wadena's 10,000 Mile Voyage.

The following letter from F. B. Smith, chief engineer of the steam yacht Wadena, to Robert Wallace, vice-president of the Cleveland Ship Building Company, builders of the yacht, will prove interesting:

{ ABOARD STEAM YACHT WADENA,
GIBRALTAR, Feb. 25, 1892.

We had a very good passage across, although considerable time was lost in port and 7,000 miles were covered between New York and Cadiz. I have not had a particle of trouble with the machinery, while we have averaged right along about 16 statutes miles or between 11 and 12 knots an hour. I am very much pleased with the Magnolia metal, it works fine and if I were building an engine for myself to run I would put it in. We have only taken one tin out of the connections since we left Cleveland and we have been nearly 10,000 miles, and they were pretty loose when we started.

I stopped at Cape de Verde islands to clean the boiler. I didn't wish to take any chances, as we used considerable salt water. I found only about 1-64 inch scale on the crowns, and hardly a particle of grease, so you see we are taking good care of that part of our plant, and I find that to be the principal care in ocean marine engineering.

The Wadena has proven to my full satisfaction that she is the best sea boat that I was ever aboard. We left Barbadoes, with our bunkers filled and sixty-five gross tons on deck. She was loaded right down to the port-lights at the engine room. We met a strong trade wind and quite a lump of sea, but she went along as prettily as a duck on a mill-pond, and very little water came on deck. It is wonderful how quickly and gracefully she will rise over the top of a wave. I would feel perfectly safe in going to any part of the world in this yacht with a good captain.

F. B. SMITH.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., Mar. 24.

Robert Rae delivered a fine lecture before the captain's organization Wednesday. His subject was "Treasure Trove," and took up the search from the earliest times to recent instances on the great lakes, when it has been sought to have the deep give up its treasure.

Capt. Wiley M. Egan has been re-elected president of the Chicago Vessel Owners' Association and Frank Higgin, secretary. The Line Agents' Association has not yet held its election. Some plan of re-organization was being talked of last fall, but so few of the agents were in town during the winter that no definite conclusion has been reached.

The action of the Lake Carriers' Association in looking for some means to broaden its influence seems very wise. Your correspondent remembers instances where the lake carriers were called upon to take action regarding Chicago river, but aid was denied Chicago men on the grounds that the Lake Carriers' Association was formed for "general" matters and the Chicago river was "local." The aid that was wanted was moral, not financial. If the Chicago river is not "general" to the vessel owners of the great lakes it is hard to tell what is. It is just this squeamishness about jurisdiction, and this finding excuses for doing nothing which has brought the lake carriers to a position where they find that something must be done, if the organization is to continue to represent the lake marine. What the lake marine needs today is an aggressive, go-ahead association, which will make itself felt from one end of the lakes to the other. Secretary McKay's labors for the Cleveland Vessel Owners' Association shows what can be done in that direction. What he wants he goes after, and doesn't wear kid gloves when engaged in the task. There are many people who know the Lake Carriers' Association only as protesting against bills in Congress. If the association is to be remodeled they hope it will have a positive as well as a negative character.

The tug Meteor, which was to have gone to Honduras last fall, has at last been caught by the creditors, and is now safe in the hands of the United States marshal. There were a lot of bills against the boat, and the apparent scheme was to get her well on her way to Honduras before her departure became known. A premature publication of the boat's proposed trip caused the plans to go astray.

The exclusive privilege of the World's Fair transportation by water is getting in a woeful muddle. The trouble arises from a curiosity of a bid tendered by J. C. Amendt, a real estate broker. This bid gives the exposition all of the plum there could possibly be in the fruit and a good deal besides. On the basis of 25 cents for the round trip, he offers 64 per cent to the exposition, and for single fares of 15 cents he gives up two-thirds. In other words, he offers to carry passengers by water at a net cost of 4½ and 5 cents. No marine man believes that these figures cover the actual cost of transportation, and there must be something else to count upon.

Congressman McGinnis is going to have the general government do the dredging in Chicago river. Ten to one he will do nothing of the kind, although the city authorities jump at the scheme. Dredging in Chicago river is not for the improvement of navigation, but for the removal of the city's sewage. All the dredging in ten years has not really improved navigation. Congress may help this ambitious and not over backward town out of the World's fair job, but it will let the "metropolis of the western empire" cart away its own sewage. McGinnis's proposition is decidedly "cheeky." But if the general government began dredging Chicago river, there is a clause in the river and harbor act about running refuse into the navigable waters of the United States which would break up the entire sewerage system of the city. The talk about the scheme is all wind.

To Offer a Bonus on Canal Grain.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont. March 24th.—The various propositions which were laid before Mr. Blaine by the Canadian deputation which visited Washington a few months ago, have been laid before Parliament for the benefit of members. One of them reads as follows: "It is proposed the United States vessels and wrecking appliances may render aid and assistance to American and other vessels and property wrecked, disabled or in distress in the waters of Canada contiguous to the United States; and that Canadian vessels and wrecking appliances may render aid and assistance to Canadian and other vessels and property wrecked, disabled or in distress in the waters of the United States contiguous to the Dominion of Canada. Also that aid and assistance shall include all necessary towing and that nothing in the coasting or custom laws of either country shall apply to vessels and wrecking appliances while actually employed in rendering such aid and assistance of such vessels and appliances."

The suspense concerning the government's action on the rebate of canal tolls is still agitating mariners. It is expected that next week will settle the matter, as the government has decided to have before it a deputation of ocean steamship men who favor Ogdensburg getting the rebate

and of western men who are opposed to it. The two deputations will argue the matter before the ministers, who will then be in a good position to decide. It appears that Mr. Blaine told the Canadian ministers that they were not observing the Washington treaty, which caused them considerable anxiety. Some members of Parliament now favor allowing the rebate for grain transhipped at Ogdensburg but at the same time granting a bonus of so much per ton on all grain transhipped at a Canadian port for Montreal. American boats could secure this bonus just the same as Canadian boats. The probabilities are this policy will be adopted, as it is considered fair to all concerned.

In the House of Commons a few days ago Mr. Dennison moved this resolution: "That whereas the new United States canal at Sault Ste. Marie is being constructed of a depth of 18 feet, and whereas it is proposed in that country to deepen their canals on the great lakes to not less than 20 feet, and whereas the proposed increase in depth has already been made at the mouth of the Detroit river, in the opinion of this House it is expedient that the Soulanges canal and the other canals on the River St. Lawrence should be deepened to 20 feet." Hon. Mr. Haggart minister of canals, pointed out that the improvements mentioned would cost millions and if the canals were deepened harbors would have to be deepened also to admit the deep draught boats. The motion was then withdrawn.

It turns out that the rates on the dry dock here are exactly the same as those of American docks. Owners claim this should not be, inasmuch as vessel property is far more valuable in the States than in Canada because vessels can get return cargoes in the former country; in the latter they can not. The dock charges will no doubt be reduced.

A very peculiar case promises to be ventilated in parliament. St. Catherine's millers pay canal tolls for wheat and receive no rebate. They claim that after the wheat is manufactured into flour and sent to Montreal, 18 cents rebate which is allowed on wheat passing the Welland and St. Lawrence canals for export at Montreal, has been paid by the government to the parties who purchase the flour at St. Catherine's. The millers claim that the rebate is due them and not the shippers.

Canadian Seamen on American Vessels.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., March 24.—Acting Secretary Nettleton has informed the commissioners of immigration at the different ports that the treasury department regards the bringing of aliens to this country under contract to perform labor as seamen on board American vessels sailing between ports of the United States and Canada as a violation of the alien contract labor law, but that this construction of the law does not apply to sailors who are domiciled in the United States at the time of beginning of such employment. He says that an American vessel deprived of its crew in a foreign port by desertion or otherwise may engage alien sailors to run the vessel. But that the importation of alien sailors under other circumstances is contrary to the purpose of the laws and would tend to cripple American commerce.

The Senate committee on naval affairs, on Thursday, had under consideration for the first time this session, the bill transferring the revenue cutter service, to the navy department, and decided after giving due weight to the letters of Secretary Foster, who opposes the measure and Secretary Tracy, who advocates it, the adoption of the recommendation made in Secretary Tracy's letter of some weeks ago, which practically puts the bill in the same form as that which passed the House last session, but failed in the Senate, just before the adjournment of that body. The bill will be favorably reported. The friends of the measure had a hearing before the committee, and presented some strong arguments in behalf of it. Ex-Congressman Eppa Hunton of Virginia, Ex-Senator Conger of Michigan, and Capt. Shoemaker of the revenue service made addresses.

The new steamer El Sud built at Newport News for the Morgan Line Steam Ship Company of New York and launched recently will ply between New York and New Orleans. The name is Spanish, meaning "the south," and was given to the new boat as she is the first big ship built south of the Potomac.

Lake Michigan Lumber Craft.

Special Correspondence to the MARINE REVIEW.

GRAND HAVEN, Mich., March 24.—Capt. T. W. Kirby has begun at his yard the construction of a small steamer, 87 feet keel, 17½ feet beam and 6½ feet hold. The engine will be 16x16 inches, and the boiler, to be built by Johnston Bros., 6x12 feet. The boat will be finished by June 1. Capt. Kirby has sold the steamer Joe to Capt. Bradley of Muskegon, and Capt. Cobb has bought from Capt. Bradley the small steamer Ellen. Capt. Cobb will sail the Ellen, running her between this city and Frankfort. Another transfer is that of the schooner Hunter Savidge from Cutler, Savidge & Co., lumber dealers of this city, to John Mullerweiss of Alpena, terms private. The boat has an insurance valuation of \$35,000. If this company does not succeed in selling the other schooner owned by them she will be placed in the Lake Superior lumber trade.

Lake Freight Matters.

Coal producers of the Hocking valley and Pittsburgh bituminous districts, who have just closed their deliberations at Pittsburgh, have settled the matter of freights between the mines and Lake Erie ports by reducing last year's rate from Pittsburgh 5 cents a ton and adding $2\frac{1}{2}$ cents a ton to the rate from West Virginia mines. This makes the rates 85 cents from both the Pittsburgh and Hocking Valley districts and \$1.02 $\frac{1}{2}$ a ton from West Virginia. The Pittsburgh rate was reduced on account of the complaint of operators in that district that they could not compete successfully with the cheaper coal of Ohio. This settlement of rates should be the basis for negotiations between the soft coal shippers of the lakes and the vessel owners for contracts covering coal to go to both Lake Michigan and Lake Superior. A single block of about 100,000 tons of coal for the head of Lake Superior, was covered some time ago at 50 cents a ton and a few charters for the first trips to Duluth were made at the same figure, and this is all that has been done upon which rates may be calculated. That the movement of soft coal will be very large there is no doubt. All of the companies operating at the head of the lakes are well cleaned up of supplies, notwithstanding the heavy stocks taken in last season in anticipation of a big railway business. Marquette dealers have been compelled within the past week to draw on the short supplies at Duluth, and coal for steam purposes is being taken down to the upper Michigan peninsula from the head of the lake. Another week or ten days will probably see some contracts for the delivery of coal at Duluth, Milwaukee and other upper lake ports from Ohio ports. The West Virginia coal referred to here is a new factor in the lake market. Very little of it was shipped in 1890, but last year about 150,000 tons went out from Cleveland and Lorain, and the increase promises to be still larger during the coming season. Pittsburgh operators succeeded in having the rail rate to lake ports on this coal advanced $2\frac{1}{2}$ cents a ton on the claim that it can be mined at a much lower cost than the coal of the Pittsburgh district. This is true of the West Virginia coal but it is soft and consequently not of the best quality for shipping purposes.

Non-Bessemer ore dealers are still unable to dispose of their product at prices that will warrant payment of advanced lake freight rates, and everybody concerned has now concluded more than ever that it will be necessary to await further developments in the iron market, with prospects of present conditions running well into the season of navigation. With some grain to be had, however, the last wheat rates being quoted at 4 cents from Duluth and $3\frac{3}{4}$ cents from Chicago to Buffalo, the vessel owners are not crowding matters and it seems best for all concerned that such is the case. A few charters have been made for first trips with grain from Detroit and Toledo to Buffalo and Erie. The steamers Nyanza and Fedora will each make three trips just as soon as the weather will permit with grain from Toledo to Erie at 2 cents.

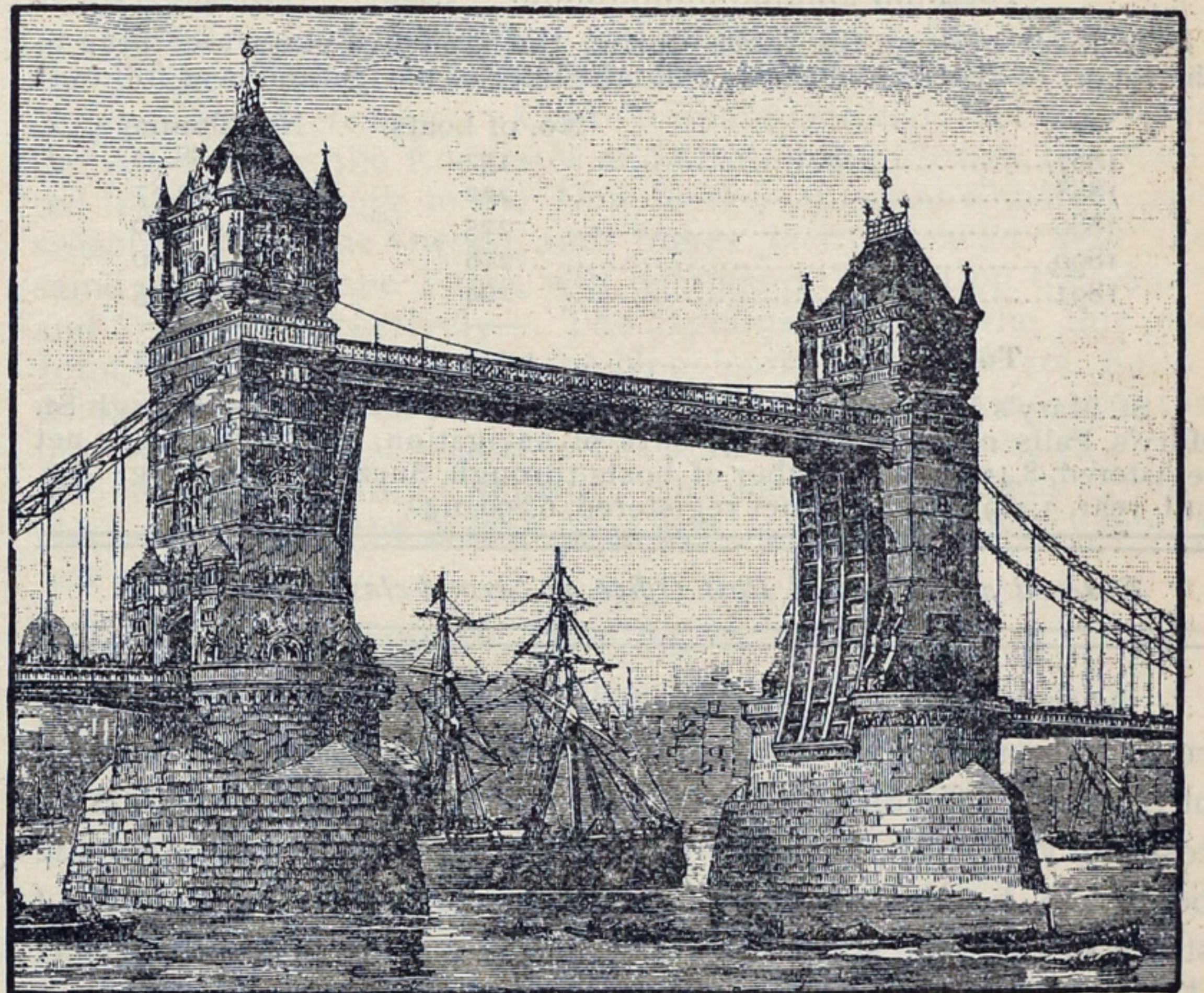
Government Protection for Inland Waterways.

An effort is being made in Congress to have the next river and harbor bill contain a provision exempting Chicago from the provision of the bill of 1890 which gives to the war department supervision over navigable streams. Since the passage of the 1890 bill the marine interests of Chicago have been trying to fight, through the general government, the railway companies and city land grabbers, who have placed all manner of obstructions in the Chicago river. The great Canal street bridge fight is based on this provision of the 1890 river and harbor act which the enemies of lake navigation in Chicago now seek to knock out by a repealing act. Chicago's different associations of vessel interests are sending on to Washington protests against the repeal as far as their city is concerned of this important act, and they should receive aid and encouragement from navigation

interests in all parts of the country as well as on the lakes. This feature of the last river and harbor act, which bids fair to prevent the construction of another objectionable bridge at Duluth, is the bulwark of American inland shipping and has already proved a stumbling block to hundreds of bridge schemes in Congress. Its repeal as regards Chicago would be a hard blow to lake interests.

A Great London Bridge.

The illustration accompanying this article presents a novel but serviceable form of bridge that might well be adapted to the Chicago river and other crowded waterways in lake ports, where the question of satisfying city interests as well as those of navigation is of the greatest importance. The structure represented in the engraving will cross the Thames near the Tower of London, and is therefore to be known as the Tower bridge. The illustration shows the bridge open. When it is closed, the two leaves of the opening span, each weighing 950 tons, are let down by counterbalance weights to the level of the bridge, 30 feet above high-water. A hundred feet above the bridge level is



A NOVEL LONDON BRIDGE.

another roadway for foot passengers who will be taken up by elevators in the towers whenever the bridge is open, and travel below is impeded. The side spans are 270 feet wide with a headway above high water of from 20 to 27 feet, the foundations are 60 feet below high water mark and 27 feet below the bed of the river, and the bridge has a sectional area of waterway of 20,040 square feet. The total length of the bridge and abutments is 940 feet and the bridge and approaches 2,640 feet, while the steepest gradient of approach is only 1 in 40. The bridge when completed will be one of the most remarkable in the world, spanning as it does what is perhaps the busiest waterway on earth.

Practically the Same Tariff.

Details regarding the Detroit meeting of lake underwriters have not as yet been given out, but it is understood that the tariff agreed upon is practically the same as last year, the only change being a reduction of $\frac{3}{4}$ c. on the better class of A1 risks. It was claimed after the meeting that, notwithstanding the unfavorable conditions under which deliberations were begun, everything pertaining to the business of the coming season is harmonious. The following underwriters were present: James A. Whitlock of New York; Townsend Davis, W. J. Sandrock, Henry S. Sill, Paul W. Bullard and J. G. Orr of Buffalo; George L. McCurdy, J. S. Gadsden, J. J. Rardon and L. L. Burton of Chicago; David Vance and F. L. Vance of Milwaukee and Eugene Harbeck, Alex. McDonnell and J. C. Burton of Detroit.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, } PROPRIETORS.
F. M. BARTON, }

HOMER J. CARR, - - - Associate Editor and Manager Chicago Office,
210 South Water Street.

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The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the report of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

ABOUT a year ago the organized vessel interests of the country were summoned to Washington to attend a conference of treasury officials relative to a proposed marine board. As a result of that conference a bill was drawn up constituting a marine board, to be composed of the supervising inspector-general of steam vessels, the surgeon-general of the marine hospital service, the commissioner of navigation, the chairman of the light-house board, the general superintendent of the life-saving service, the superintendent of the coast and geodetic survey and the chief hydrographer of the navy, to act as a sort of sieve through which legislation relative to vessel interests must pass before it was enacted by Congress. The importance of the board to vessel owners lay in the fact that all bills relating to vessels would be referred by Congress to the board; and the bill constituting the board provided that the board should have power to summon the vessel interests of the country before them, and to consult with them concerning the provisions of any proposed legislation. By filing an application with the board, the Lake Carriers' Association and other vessel-owning associations on the lakes, would always be notified of any matters pending before them affecting the interests of lake vessel owners. If such a board had been in existence, unquestionably it would have been asked by the secretary of the treasury to frame Senate bill 1,755, the famous Frye measure, instead of the board of officers from the revenue marine, who did in fact prepare this bill.

Now, while many vessel owners of the lakes, as well as the REVIEW, have not been altogether in favor of the establishment of this board, and would much prefer to join a strong movement for the separation of the different officers of shipping departments from the treasury department, with a view to forming a separate department of commerce, it would seem that there is a probability of the passage of this bill for a marine board, and the lakes should be heard from with regard to it. The bill passed the Senate in the last session, but failed in the House. This year it

has passed the Senate again, with an amendment which at first seems unimportant. This amendment provides for adding to the officers constituting the board, as named in the bill of last session, the chief of the revenue marine. The operation of this amendment would be to add to the marine board Capt. L. G. Sheppard of the revenue marine; and this Capt. Sheppard is the father of Senate bill 1,755, he having been chairman of the committee who prepared the bill. Is it not important that the House should pass the marine board bill in its original form, without the Senate amendment? There can be little doubt that the Senate amendment was added through a desire on the part of Capt. Sheppard to become a member of the board. Vessel interests all over the country should take the ground that the matter of the composition of the board was thoroughly discussed at the Washington conference; that it is extremely desirable that the board should not be too large and cumbersome, and that its composition as originally fixed is best calculated to render it an efficient body. The great annoyance to lake vessel owners caused by the Frye bill and similar measures should prompt these interests to take up the bill for a marine board at the proper time. It is now before the House committee on commerce and the chairman and members of this committee should be petitioned, if the measure is to be passed, to report it in its original form, without the Senate amendment.

WE can not consistently object to the Lind bill, which proposes that lake vessels shall report to the customs officials every time they enter or leave port, whether taking on cargo or not. The subject of securing accurate statistics of lake commerce has been prominently before the vessel owners for several years past, and they have shown little or no interest in preparing a law that would be acceptable to themselves as well as the government officials in charge of statistics. We have not favored the system proposed by the Lind bill, and have given up a great deal of space in an effort to impress the vessel owners with the fact that unless they proposed a system themselves, some such measure as the one now under consideration would be passed. The vessel owners have only themselves to blame if they do not succeed now in passing a substitute for the bill. It has passed the Senate and has been reported favorably to the House by the committee on commerce. Senator Vilas and Mr. Lind of Minnesota are earnest in their support of the bill and will probably secure its passage.

Commander Ludlow, Chicago, gives notice that the pier-head range light at St. Joseph Mich. has been re-established, the channel having cut through the sand bar which formed in October last outside the north pier. There is now about 12 feet of water on the bar. The spar buoy recently carried away will be replaced as a red buoy on the northwest end of the shoal and on the south side of the channel over the bar.

The Campbell & Zell Company of Baltimore, builders of the Zell water tube boiler, have secured the plant known as the Ramsey Engineering Works at Locust Point, Baltimore, and will operate this extensive concern in conjunction with their Enterprise Iron Works at Canton. This gives the Campbell & Zell company facilities for building and all kinds of repairs.

An Improvement on the Original.

EDITOR MARINE REVIEW: I take pleasure in acknowledging a marked copy of your valuable paper of the 17th inst. containing a perfect reproduction of the group of supervising inspectors of steam vessels, as photographed from life at the recent meeting of the board in this city, the reproduction if anything being an improvement on the original picture.

JAMES A. DUMONT,

Washington, D. C., March 21, 1892. Supervising Inspector General.

Official Numbers and Tonnage.

The bureau of navigation assigned official numbers to the following lake vessels during the week ending March 19: Steam—Calumet Milwaukee, 62.55 tons gross, 31.28 net, No. 126,838; S. O. Dixon, Milwaukee, 29.24 tons gross, 14.80 net, No. 116,478. Sail—Lena Hall, Grand Haven, 22.38 tons gross, 21.26 net, No. 141,190.

Around the Lakes.

Capt. M. J. Galvin has become a member of the vessel-brokering firm of Mallon & Boland of Buffalo.

Capt. Carlton Graves has bought an interest in the steamer Keystone and consort Masten, and will sail the Keystone.

Messrs. J. O. Lindquist and K. and C.A Lundberg have sold the steamer City of Green Bay to Endress & Son, Lake Superior fish dealers.

Thomas Fish and others of Detroit have purchased the tug J. P. Clark and barge Prince Alfred from C. G. Meisel. The terms were private.

Edward Smith of Brown & Co., Buffalo, is now managing owner of the steamer Samuel Marshall. The Marshall will tow the barges Tilden and Maxwell.

The consort building by F. W. Wheeler & Co., West Bay City, for John C. Fitzpatrick and others, owners of the steamer George T. Hope, will be named for her managing owner.

R. H. Hebard of the Wabash line, Buffalo, has been appointed representative at that point of the new "Soo" line, for which the American Steel Barge Company is building two whaleback package freight carriers. The boats will run between Gladstone and Buffalo.

An error was made in this department last week when it was said that the Sandusky Coal Company of Sandusky had gone out of business. J. T. Solon is the new general manager of the company, Mr. Hubbard having resigned a short time ago. We regret the mistake.

Owners of the steamer City of Paris, recently purchased from Capt. James Davidson of West Bay City, have incorporated their interests under the name of the McGraw Steamship Company of Hampton, Mich. The capital is \$140,000 and the incorporators are Thomas Cranage and Joseph W. McGraw of Bay City, John S. McNeil of West Bay City and Edward Smith of Buffalo.

The steamer B. W. Blanchard will run in the Cloverleaf line, between Toledo and Buffalo, the coming season, in place of the Dean Richmond. The Pidgeon remains in the line. The Lackawanna people again will run the steamer Newburgh between Green Bay and Buffalo, with the Grand Traverse. Nothing has been done yet as to chartering the Florida and Wyoming for the Chicago route.

Andaste and Choctaw are the names to be given to the steamers of monitor type now under construction at the yard of the Cleveland Ship Building Company for the Lake Superior Iron Company. It is remarkable that the names of all the Lake Superior company's steamers excepting the Joliet contain just seven letters and an additional "l" will be added to the Joliet this year to make the names of this fleet uniform.

The Jenks Ship Building Company of Port Huron, which now has on the stocks two wooden steamers about the size of the A. A. Carpenter sold recently, has purchased from O'Brien J. Atkinson 2,000 feet of land fronting on the river below Dunford & Alverson's big dock. It is said that the company has in view the erection of an iron plant or at least an equipment sufficient for repairing iron vessels. The two wooden boats under construction are for sale.

Capt. Eber Ward of Detroit, is organizing a Lake Superior line for the ensuing season. He already has secured the steamers J. C. Ford, Toledo, and Northerner, and expects to close for the Saginaw Valley. At Buffalo his through freight will be turned over to the Erie road. Capt. Syd. Scott of Detroit, who sold out his interest in the steamer Norwalk, is managing owner of the Ford, and will sail her. She is being fitted with steel arches and two gangways on each side.

Diver Chalk, of Superior, who was at Alpena recently making preparations for an attempt to raise the steamer Pewabic and the 300 tons of copper which the wreck contains, claims to have gone down on two occasions in 109 feet of water about nine miles from the point where the wreck has been located. He says that with an ordinary diving suit he worked at that depth with as much ease as he would in 75 feet of water. He will try to find the Pewabic in June.

S. B. Grummond has sold the tugs Winslow and Sweepstakes to the Saginaw Bay Towing Association and has purchased from B. Boutelle and Peter C. Smith of that association the

steamer Manistique. The price of the tugs is said to be \$34,000 and that of the steamer \$40,000. The Manistique will be used by the Grummond line as a wrecker to take the place of the burned Leviathan at Cheboygan, Mich. Through this trade the Saginaw tug association has the largest line of tugs on the lakes.

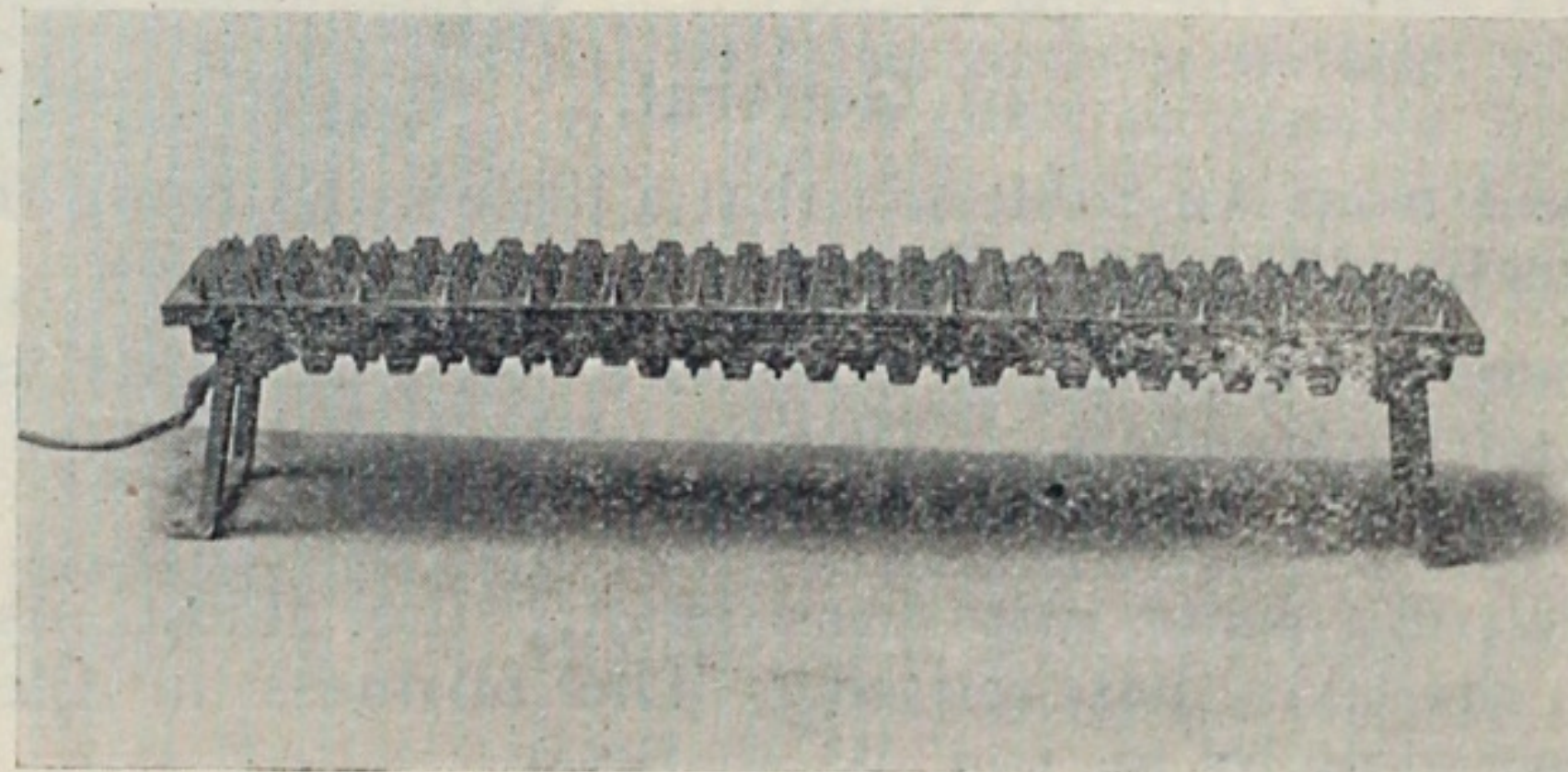
In view of the proposed scheme of the Toledo, Ann Arbor & Northern Michigan Railway Company for shipping coal across Lake Michigan on barges constructed so as to take the cars aboard, Mr. J. M. Ashley, vice-president of the company, has examined in the east some of the barges used for similar service. He was very favorably impressed while in New York with the steamer Empress, which is owned by the New England Terminal Company and runs between New York and Wilson's point.

In the spring of 1888 George B. Davis of Detroit purchased a tug from the Blanchard Navigation Company of the same place and paid part cash with security for the balance of the purchase price. In the bill of sale the tug was said to have been built in 1879 and was represented to be in good condition. Later on her boiler was condemned and it was found that she was built in 1871. The Blanchard company brought suit for the balance of the payment on the tug and the case was tried recently in the circuit court, Wayne county, Michigan. The purchasers of the tug were upheld in their refusal to pay the full price agreed upon in the sale.

Appointments of masters and engineers for the nine steamers of the Union line, Buffalo, are printed elsewhere. The changes are interesting. Capt. William Gardner, last season in the Avon, takes the Rochester and Capt. John Clossey is promoted from the Portage to the New York. Joseph Frawley, last season mate of the Owego, and James Jackson, who held the same position in the Tioga, will command this season the Avon and Portage respectively. The captains leaving the line are John Vaughan, who was in the New York, and William Kilby, who was in the Rochester. Charles Wall, chief engineer of the big Owego, was last season in the Matoa, one of the boats of the Minnesota Steamship Company, Cleveland. Alexander Jones, chief engineer of the Nyack, was first assistant on the Chemung last season.

Electric Heating in Yachts.

The supplemental illustration of the triple expansion engines of the steam yacht Comanche in the REVIEW recently, attracted considerable attention, and below appears the cut of a device which will find a place in the cabins of the yacht, that is a greater novelty than the engines. The cut represents a Burton electric heater. It is about 27 inches long by 8 inches wide and stands on four legs about 4 inches high. This is only one form of the heater. It can be set in the wainscoting, attached to the wall or used in many forms that produce a decorative effect. The heater consists of two corrugated iron castings, holding in the intervening space the resistance wire imbedded in fire clay, the purpose of which is to absorb the heat generated in the wire and prevent oxidation of the latter.



The furnishing and finishing are not injured as by steam or stove heat, and with electricity the atmosphere is not charged with odors of desicated steam and noxious gases. The pressure of a button or turning of a switch is the only disturbance raised when heat is desired. That low rumbling sound, so disagreeable in steam radiators, is not included in an electric heater.

While electrical heating is a novelty it has been in use on limited trains, street cars and dwellings four years, and it is understood that the Electric Merchandise Company, Chicago, will shortly equip several Atlantic liners with the Burton apparatus.

Send 25 cents in stamps to MARINE REVIEW for photo-gravures of the Virginia, Wadena and City of Detroit.

Settlement of the Wrecking and Canal Questions.

It seems as well as settled now that the Canadian Parliament will pass the bill introduced recently by Minister Bowell for reciprocity in wrecking privileges between that government and the United States. Our own government made preparations in the matter by the passage of a similar bill in the last Congress and there is nothing to prevent the agreement going into effect this season. Wrecking companies on the lakes are evidently preparing themselves for the new condition of affairs. The Canadian authorities have announced that this was one of the questions settled at the recent reciprocity conference, and the following communication from the state department would indicate that the matter of discrimination in Welland and St. Lawrence canal tolls was also agreeably adjusted:

DEPARTMENT OF STATE, WASHINGTON, March, 18, 1892.

The Proprietors of the MARINE REVIEW, Cleveland, O.:—Gentlemen: I have to acknowledge the receipt of your letter of the 12th inst. concerning reciprocity with Canada in wrecking matters and the settlement of the Welland and St. Lawrence river canal tolls. In reply, I desire to observe that these questions were the subject of consideration in the conferences lately held in this department between the secretary of state, the British minister, and the Canadian commissioners. An understanding on both points was reached, which it is hoped will effectually remove the causes of complaint heretofore existing.

WILLIAM F. WHARTON,
Acting Secretary.

The announcement from the Canadian government that it was the intention, as a result of the conference, to consider the canal question with a view to placing both American and Canadian vessels on an equal footing has aroused Kingston forwarding interests, but the steamship agencies at Montreal, who are benefited by an increased export business in grain going by way of Ogdensburg, are outspoken in favor of giving American forwarding interests equal rights in the canal route, and it is more than probable that the government will look at the matter in the same light.

Grain at Chicago and Duluth.

Following is a statement of wheat stocks at Chicago and Duluth:

	Chicago.	Duluth.
In store	9,865,197 bu.	10,151,955 bu.
Afloat	1,129,000 bu.	400,703 bu.
Increase last week.....	182,421 bu.	881,113 bu.
Excess over same time last year...	2,988,167 bu.	5,907,464 bu.

Stocks of corn in Chicago aggregate 1,748,261 bushels, an increase of 200,563 bushels for the week and an increase over the same date last year of 1,401,928 bushels. There is also 1,180,000 bushels of corn afloat in Chicago. Stocks of oats in Chicago foot up 893,764 bushels, against 444,830 bushels on the same date last year.

In General.

Advises from Au Sable say that a little rain during the past few days is breaking up the ice.

The steamer building at Wheeler's West Bay City yard for A. E. Stewart and others of Detroit will be named for C. F. Bielman, who is a part owner of her.

Mr. W. B. Scott, who was among the oldest insurance agents on the lakes, has retired. The business in Cleveland will be carried on by his son, W. C. Scott.

Senator Vilas a few days ago introduced a bill, No. 2,646, providing for the purchase of the Sturgeon bay ship canal. It was referred to the committee on commerce.

J. W. Westcott of Detroit, Henry McMorran of Port Huron, F. B. Hackett of Amherstburg, and Michael Fleming and Charles Mills Garvey of Sarnia are seeking incorporation as the Western Wrecking Company, Limited, with headquarters at Sarnia and a capital stock of \$20,000.

Few measures coming before Congress have met with more prompt and decided opposition than the Frye bill, which proposed a revolution in the inspection of vessels and which was fathered by Col. Shepard of the revenue marine. Senator Frye, who simply introduced the bill without investigation as to its

provisions, is satisfied that it contains much that ought not become law, and it is as well as settled that nothing more will be heard of it in the present Congress. The protests to the bill from the Lake Carriers' Association and the American Steamship Association of which Mr. D. D. C. Mink of Philadelphia, general agent of the Clyde lines, is president, are especially strong documents.

J. C. Gilchrist of the firm of Moore, Bartow & Gilchrist of Cleveland has purchased the steamer Hiawatha from C. H. Lane of Buffalo for \$62,500. He is also figuring on purchasing the Hiawatha's consort, the Minnehaha, which is still ashore near Detour, where the boats were both stranded last fall. John Jacobs of Marquette has sold to Capt. Lime Woodruff of Sheffield, O., a third interest in the steamer Otego. Like interests in the Otego's consorts, Monticello and Montmorency, have been sold to Fred Woodruff, son of Capt. Lime Woodruff, and Capt. Jones of Cleveland. The men purchasing interests in the barges will also sail them, and the tow will be given employment in the Lake Superior stone trade by Mr. Jacobs.

Vessel and Machinery Exchange.

The space devoted to describing in two lines, vessels or machinery that our advertisers or subscribers want or have for sale, has failed in no instance to bring at least one reply and often the inquiries number from three to six. Two items inserted last week were responded to by a telegram and five letters. One was a fish tug and the other a boiler for sale. As a matter of accommodation to one of our advertisers who wanted a man of peculiar ability, we inserted two lines and the address of the man he was looking for was sent to him this week. This suggested the addition of an employment feature to this department and the changing of the heading to MARINE REVIEW LINER EXCHANGE. In order to keep it within limits, positions which are open to any one and easily filled will not be included. Captains', mates' and engineers' positions, as well as those of draughtsmen, mechanical men, etc., will come under the new head. The advantages of this space are open to our advertisers and subscribers free, to others at 25 cents a line. Two inquiries for steamers advertised for sale in the exchange were received from Port Tampa, Florida, this week.

Appointments of Masters and Engineers.

PARKER, L., AU SABLE, MICH.: Steamer Richard Martini, Capt. Thos. Van Stan, Engineer J. D. Budd.

HART'S STEAMBOAT LINE, GREEN BAY, WIS.: Steamers—Fannie C. Hart, Capt. H. W. Hart, Engineer Jule Schram; Eugene C. Hart, Capt. C. B. Hart, Engineer John Valier; C. W. Moore, Capt. Wm. Baptist, Engineer James Dunlap; Welcome, Capt. P. S. Roulette, Engineer George Coulter.

MATTHEWS LINE, TORONTO ONT.: Steamers—Niagara, Capt. James Morgan, Engineer Isaac Boyd, Clinton, Capt. M. Troy, Engineer James Bracken. Schooners—Emerald, Capt. John Philp; Laura, Capt. S. C. Malcolmson; Clara Youell, Capt. George Philp; Lisgar, Capt. H. McClory; Grimsby, Capt. N. R. Maitland.

ADAMS, THOMAS, DETROIT, MICH.: Steamers—Tom Adams, Capt. D. Nicholson, Engineer James Kelly; Jesse H. Farwell, Capt. D. Duncanson, Engineer W. T. Cullen; F. E. Spinner, Capt. George B. Kendall, Engineer T. J. Kelley. Schooners—J. H. Rutter, Capt. S. L. Ketchum; Shawnee, Capt. John Eberlein; Godfrey, Capt. D. W. Matteson.

UNION STEAMBOAT COMPANY, BUFFALO, N. Y.: Steamers—Chemung, Capt. Walter Robinson, Engineer Charles Wall; Owego, Capt. John Byrne, Engineer H. C. Jordan; Tioga, Capt. A. A. Phelps, Engineer John Mayberry; H. J. Jewett, Capt. B. Bordeaux, Engineer George Fritsche; Rochester, Capt. W. P. Garden, Engineer N. Johnson; New York, Capt. J. M. Clossey, Engineer Joseph Howlett; Avon, Capt. J. Frawley, Engineer F. Colton; Portage, Capt. James Jackson, Engineer George Haig; Nyack, Capt. Thomas Judge, Engineer Alex. Jones.

MERCHANT'S LINE, TORONTO, ONT.: Steamers—Persia, Capt. John H. Scott, Engineer Alex. Ramsey; Ocean, Capt. J. T. Towers, Engineer Robert Black; Purser, Capt. John Malcolmson, Engineer John Harrington; Alma Munro, Capt. T. Brown, Engineer W. Milne; Cuba, Capt. J. C. Hume, Engineer W. Kennedy; Celtic, Capt. Oliver Patenande, Engineer Ed. Taylor; Lake Michigan, Capt. John Clifford, Engineer Neil Kirkpatrick; St. Magnus, Capt. Medge, Engineer J. A. Free; L. Shickluna, Capt. H. O. Jackson, Engineer W. Cunningham.

Send 20 cents in stamps for Tabulated Statement showing Lake Superior ore production for 1891, and the past 36 years.

Affairs in Admiralty.

DAMAGES DIVIDED.

It is almost an exception with the courts of late to decide a collision case without a division of damages. The demand for strict observance of statutory regulations seems to be the cause. Three cases of this kind are reported in the current issue of the Federal Reporter. The first of them comes from Judge Morris of the United States district court, Maryland. A collision happened in the night time on the Patapsco river between two side-wheel steamers, the Virginia and the Louise. The Louise, the incoming steamer at a proper distance signaled to the Virginia by two blasts that she desired to take the southerly side of the channel, being the side which was on her port. The signal was answered by a tug which was between the Louise and the Virginia. Without getting any reply from the Virginia, the Louise put her helm to starboard, and continued at her full speed of 11 miles an hour, until she was about a quarter of a mile from the Virginia, when she again gave a signal of two blasts. The Virginia being then over on the southerly edge of the channel with her wheel to starboard, and the channel being obstructed by a schooner, the Virginia was unable to avoid the Louise and they collided just at the bend of the channel. The court held that the Louise was in fault in putting her helm to starboard and taking the side of the channel which was on her port without getting an assenting signal from the Virginia; also in not obeying the rule which required her, having the Virginia on her starboard side, to keep out of the Virginia's way; also because when the risk of collision was apparent the Louise did not stop and reverse her engines but merely slowed. The Virginia, the outgoing steamer, heard the signal of two blasts given by the Louise and when it was answered by the tug supposed it was intended for the tug. She continued her full speed of 14 miles an hour, and ported her helm to avoid the schooner, and went over to the southerly end of the channel; but she did not make out the side lights of the Louise, nor did she signal herself until the Louise came out from behind the schooner, and signaled a second time when the steamers were not over a quarter of a mile apart. Then the Virginia blew danger signals and reversed her engines and did all she could to avoid the collision. The court held as to the Virginia that, as she was nearing a bend of the channel obstructed by the schooner and had not made out the side lights of the Louise, she was in fault in maintaining such a high rate of speed in a place of such danger, under such uncertainty with regard to the Louise's course, without having a distinct understanding by interchange of signals before the steamers had approached so near to each other. Experience has demonstrated that the strict observance of every precaution prescribed by statutory regulations and by good seamanship is necessary for the safe navigation of steamers at high speed in channels of this kind. Both steamers were at fault.

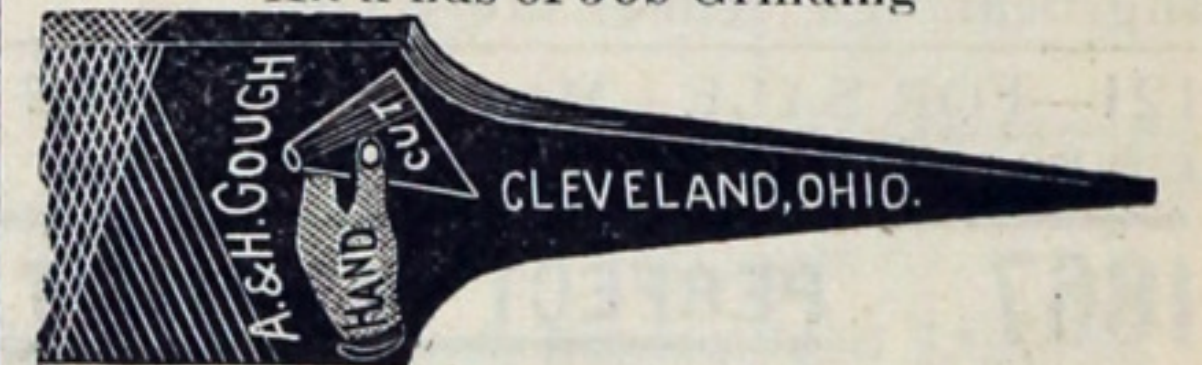
The second case is from California. The steamship State of California was bound for San Francisco and, when a short distance outside, sighted the barkentine Portland two points off her starboard bow and near two miles distant, bound for the same place. No lights were observed on the barkentine, and the master of the steamer, supposing that the courses of the two vessels were nearly parallel, neither reversed his engines nor slackened his speed, but steamed on his course at the rate of 13 knots an hour. The night was dark but clear, and the courses of the vessels was in fact nearly at right angle. The barkentine was on the starboard tack sailing close-hauled upon the wind, and continued her course until the steamer was within 300 yards of her, and apparently about to strike her amidships, when she was luffed into the wind, thus slackening her speed and turning her bow to starboard and away from the steamer. The latter, without changing her course or abating her speed, undertook to steam across the bows of the barkentine, when they collided, the bow of the barkentine coming in contact with steamer just abaft her beam, and both were seriously injured. The lights were burning on the barkentine, but the proof was not satisfactory that they were sufficient and such as required by law. The circuit court of appeals, ninth circuit, held that the steamer was in fault on sighting the sail, in not reversing her engines, or slackening her speed until the course of the barkentine could certainly be ascertained, and then it was her duty to keep out of the way; and therefore the damage occasioned by the collision ought to be divided.

In the third case, reported from the circuit court of appeals, second circuit, Judges Wallace and Lacombe, an abstract of the decision prepared by the court is as follows: By a collision during a fog between a steamship and a schooner the latter received injuries from which she sank. The schooner had no mechanical fog horn and, though the horn which she had was sounded, it was not heard by those in charge of the steamship. The failure of the schooner to have and use an efficient fog horn, to be sounded by mechanical means as required by the statute, was at least a contributing cause of the collision. A steamship failing to reduce her speed when going through a fog in one of the main lines of travel to such a rate as will admit of her being brought to a stand-still within the distance at which in the condition of the fog she can discover another vessel, is guilty of a fault rendering her responsible for damages in case of a collision which might have been avoided if her speed had been less. Where the loss of a schooner by collision with a steamship in a fog is caused by an improper rate of speed on the part of the steamship, and the want of a proper fog horn on the part of the schooner, the damages must be divided.

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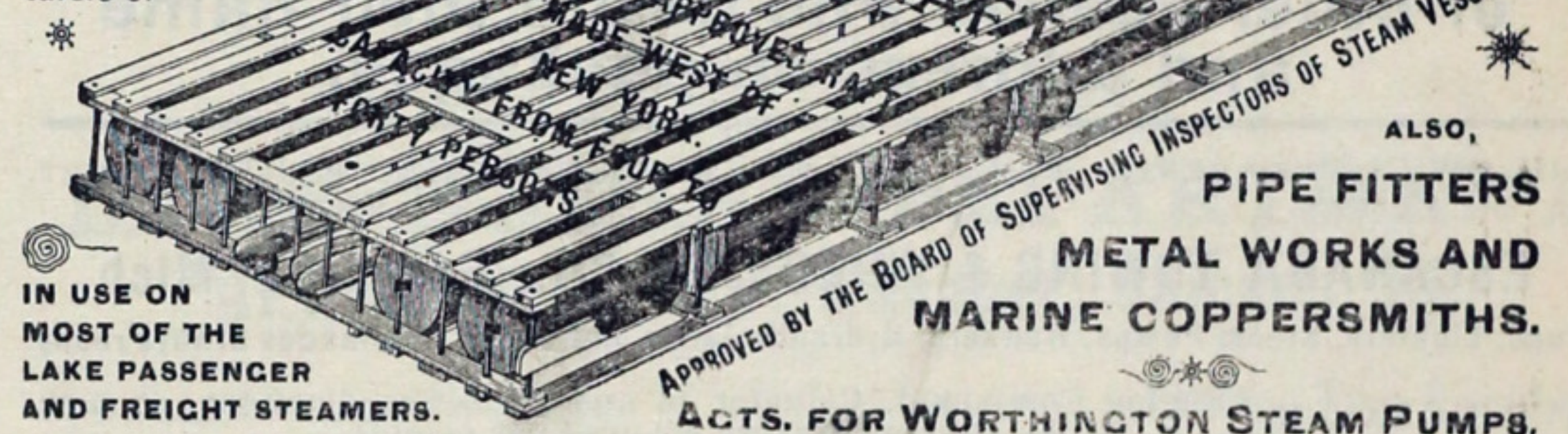
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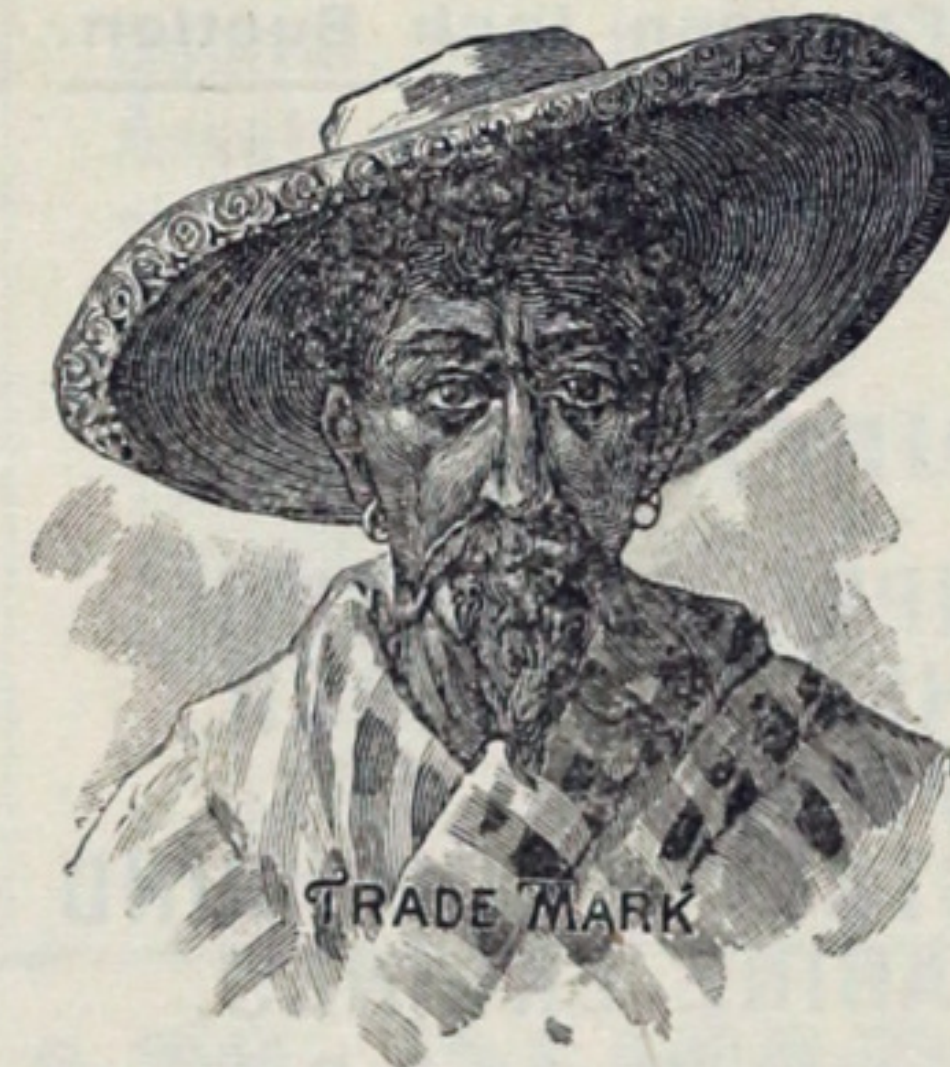
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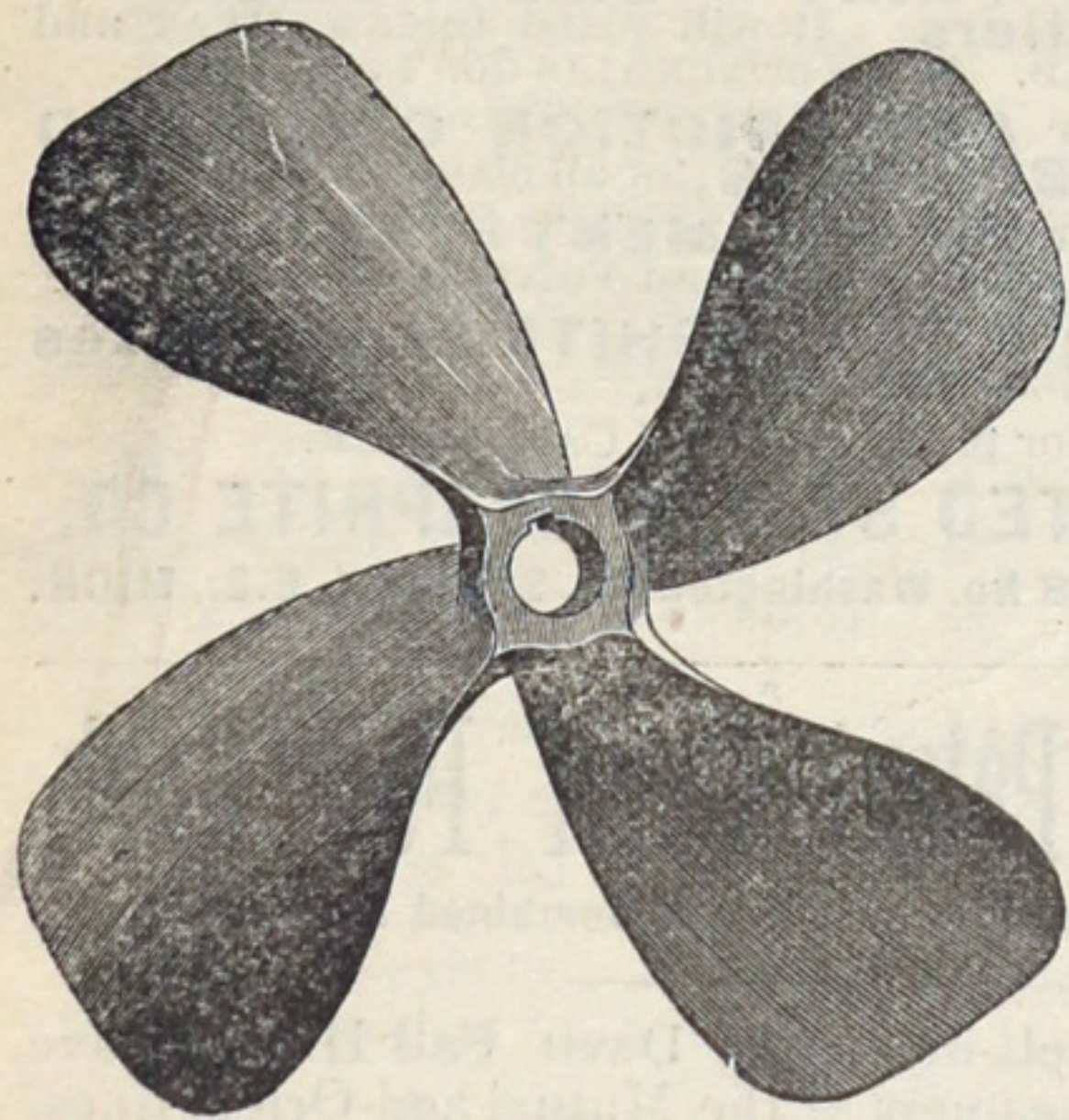
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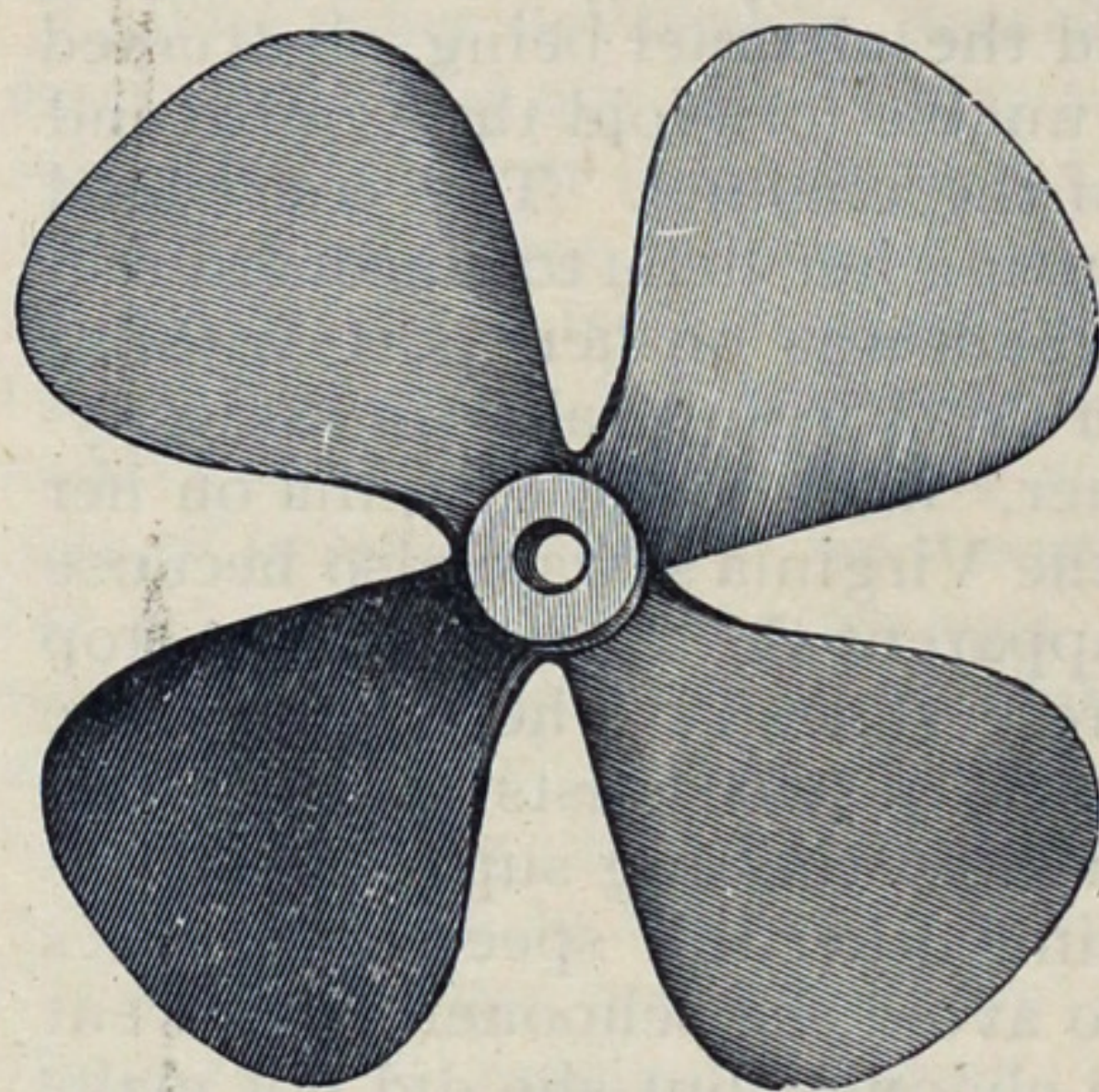
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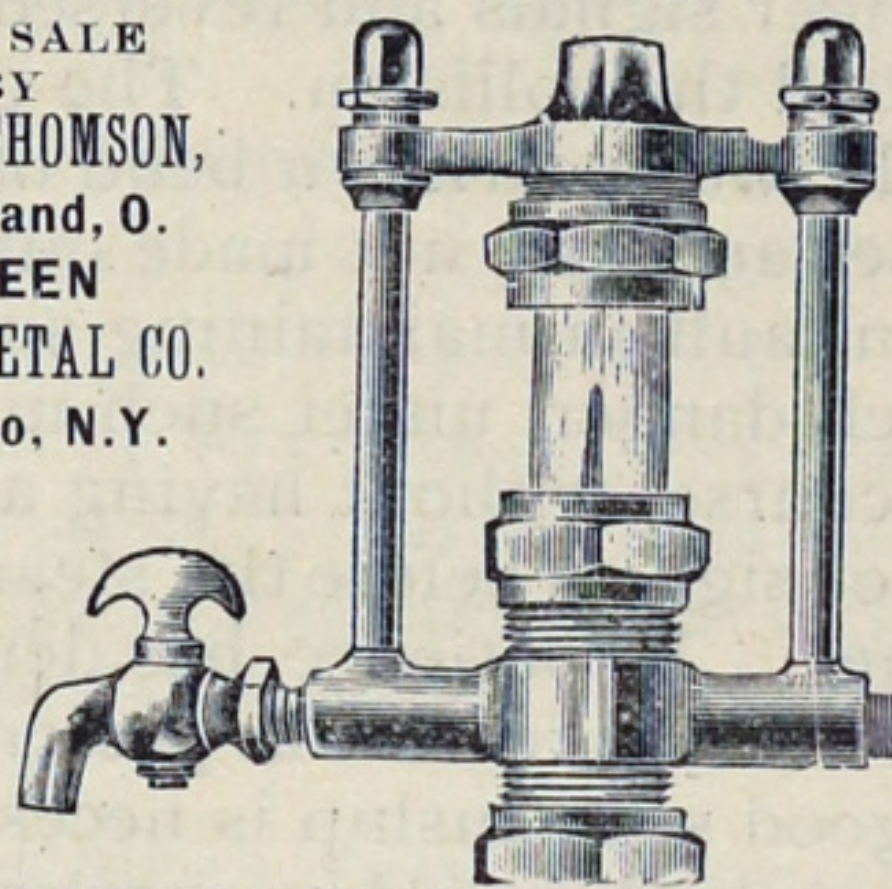


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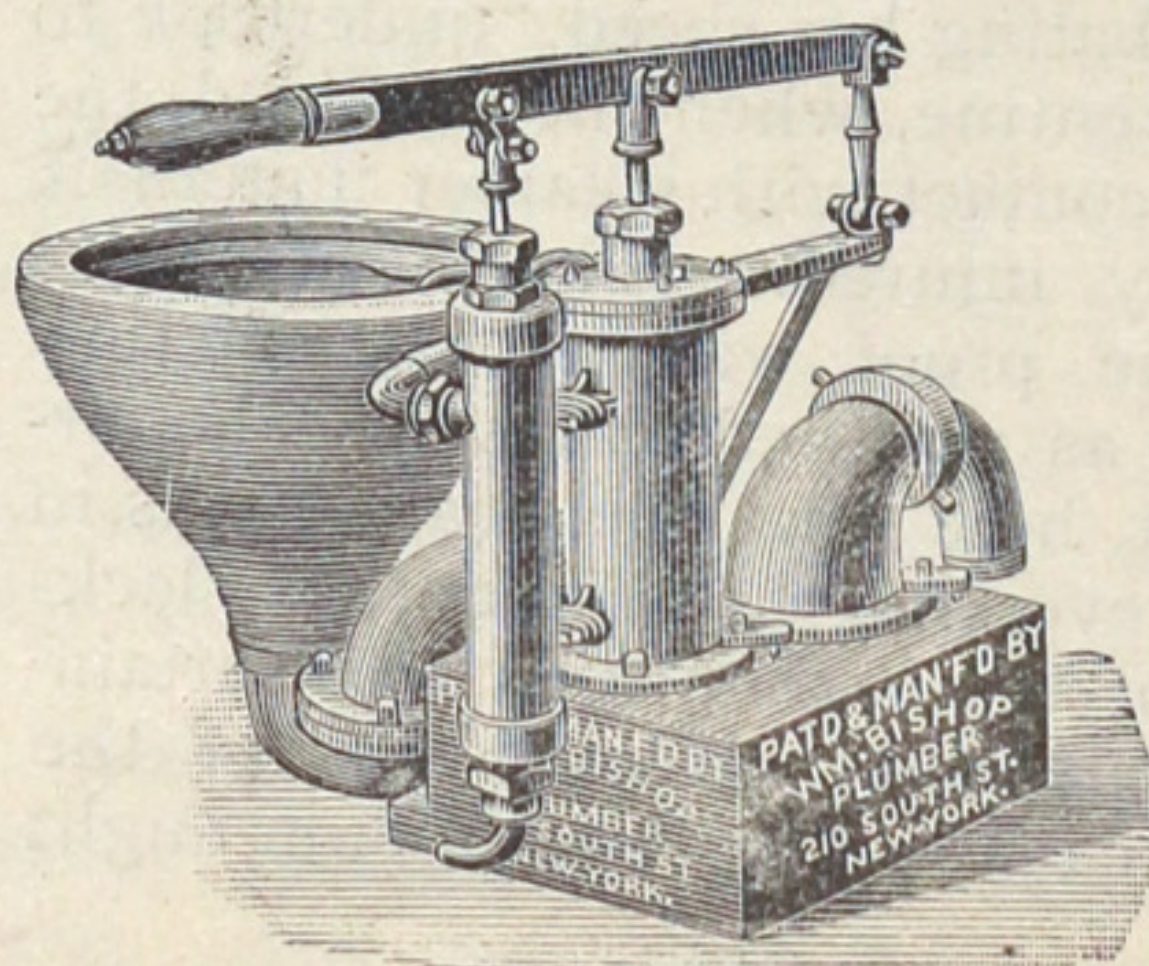
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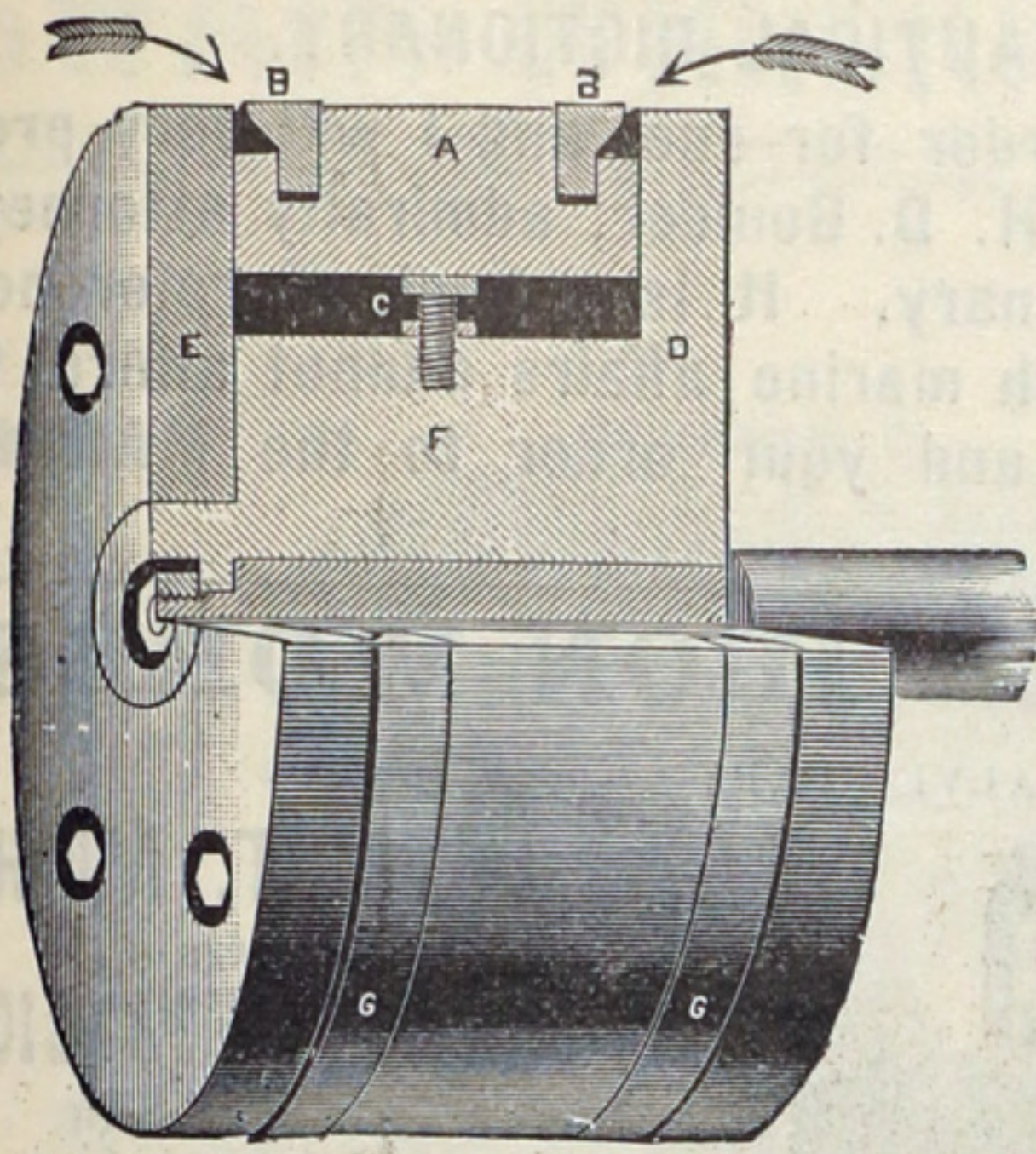
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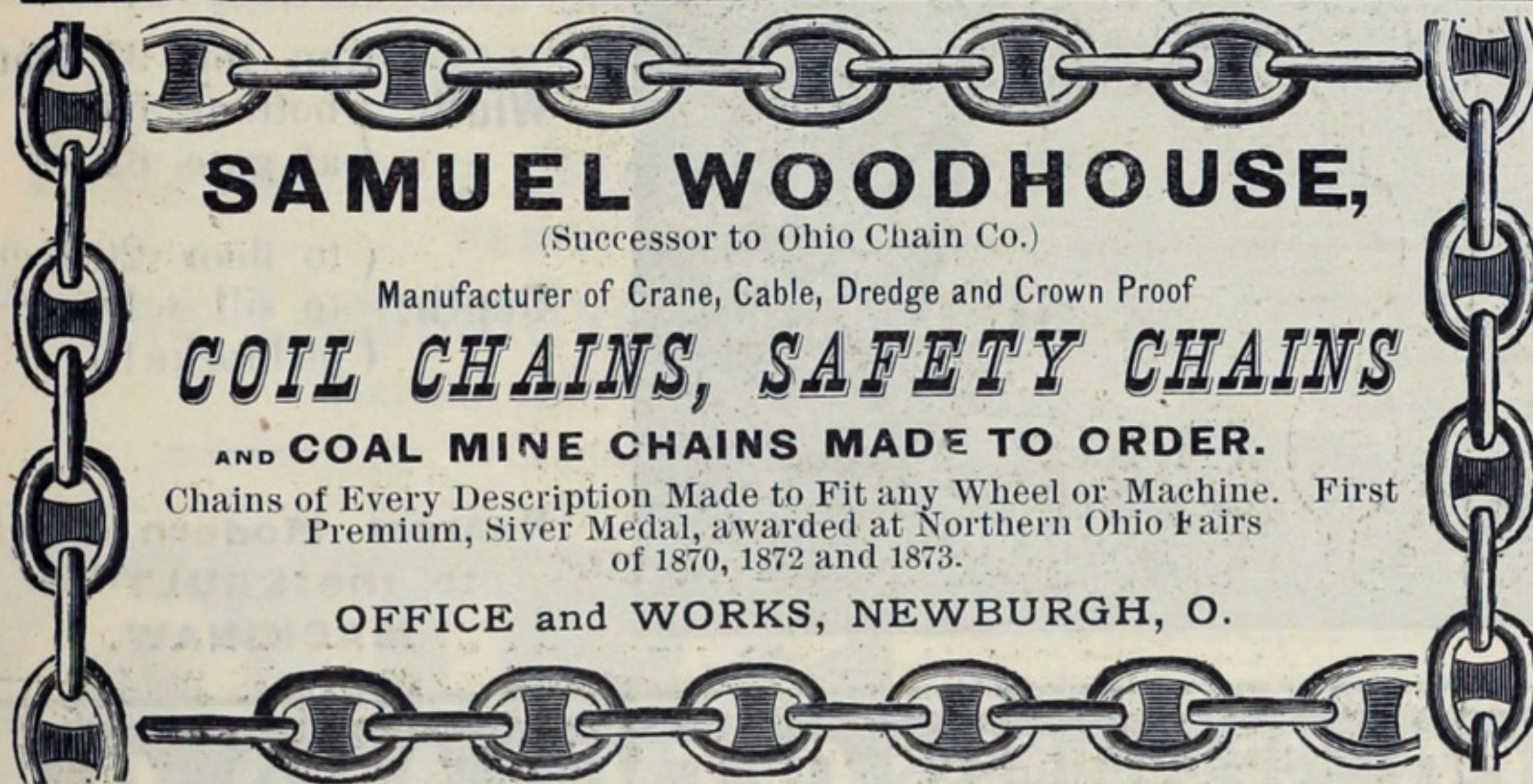
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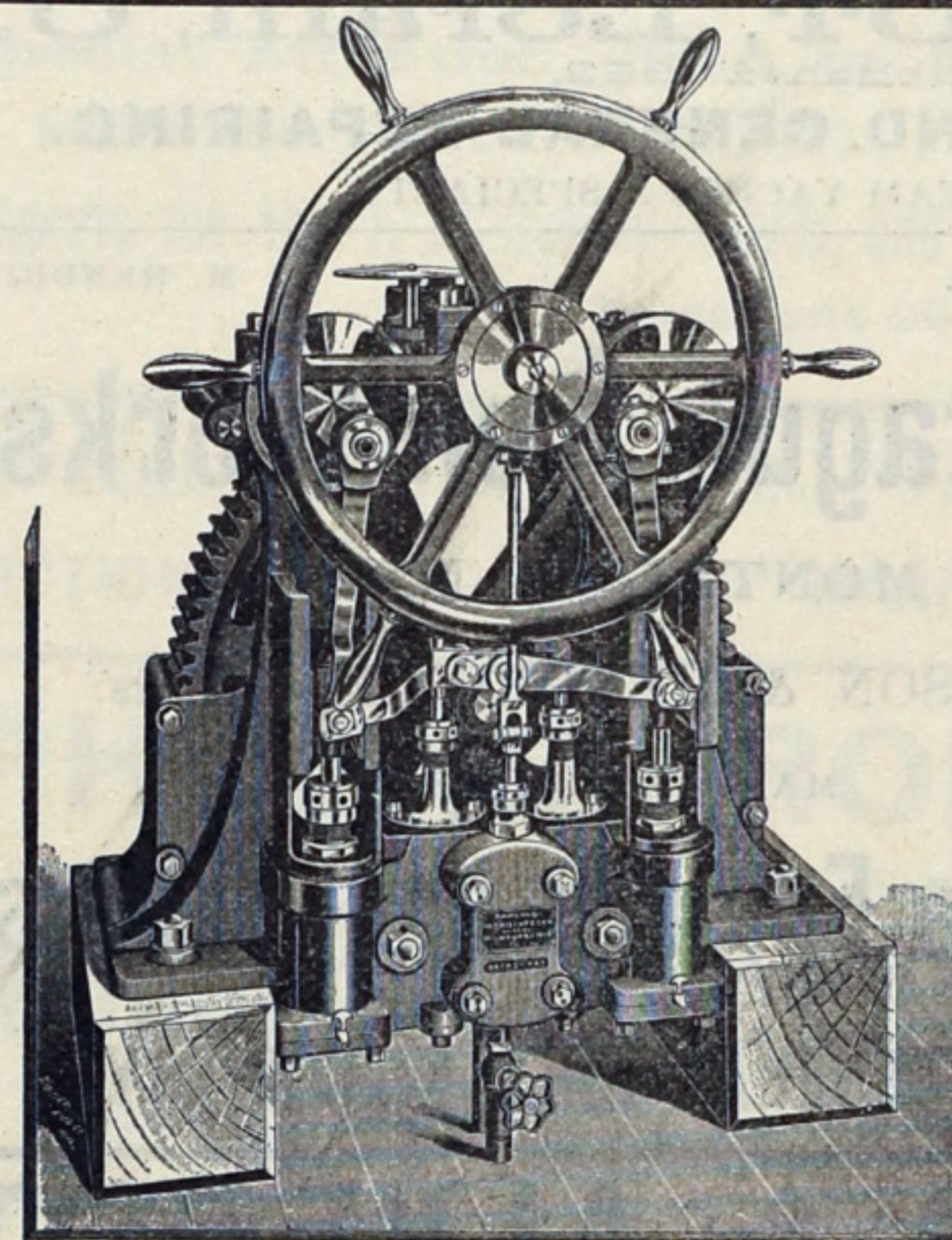
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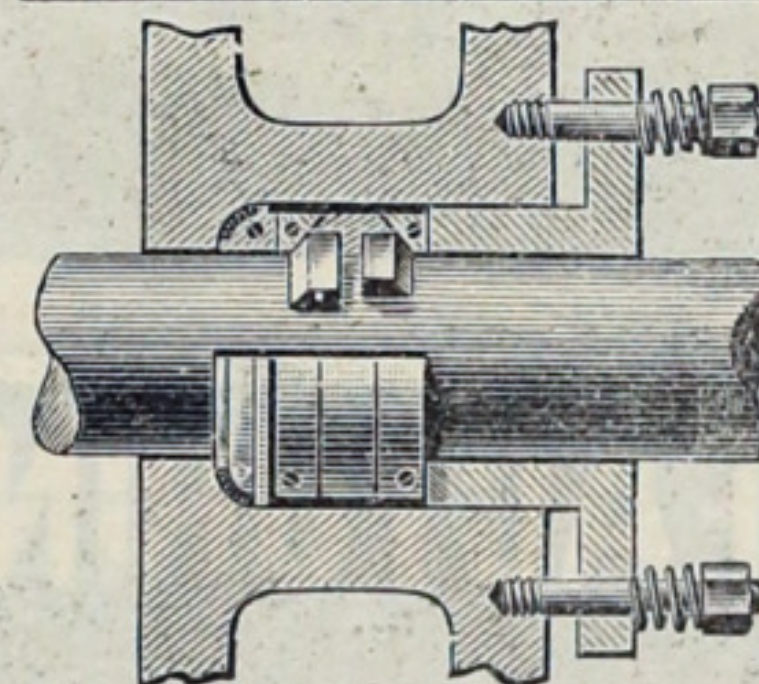
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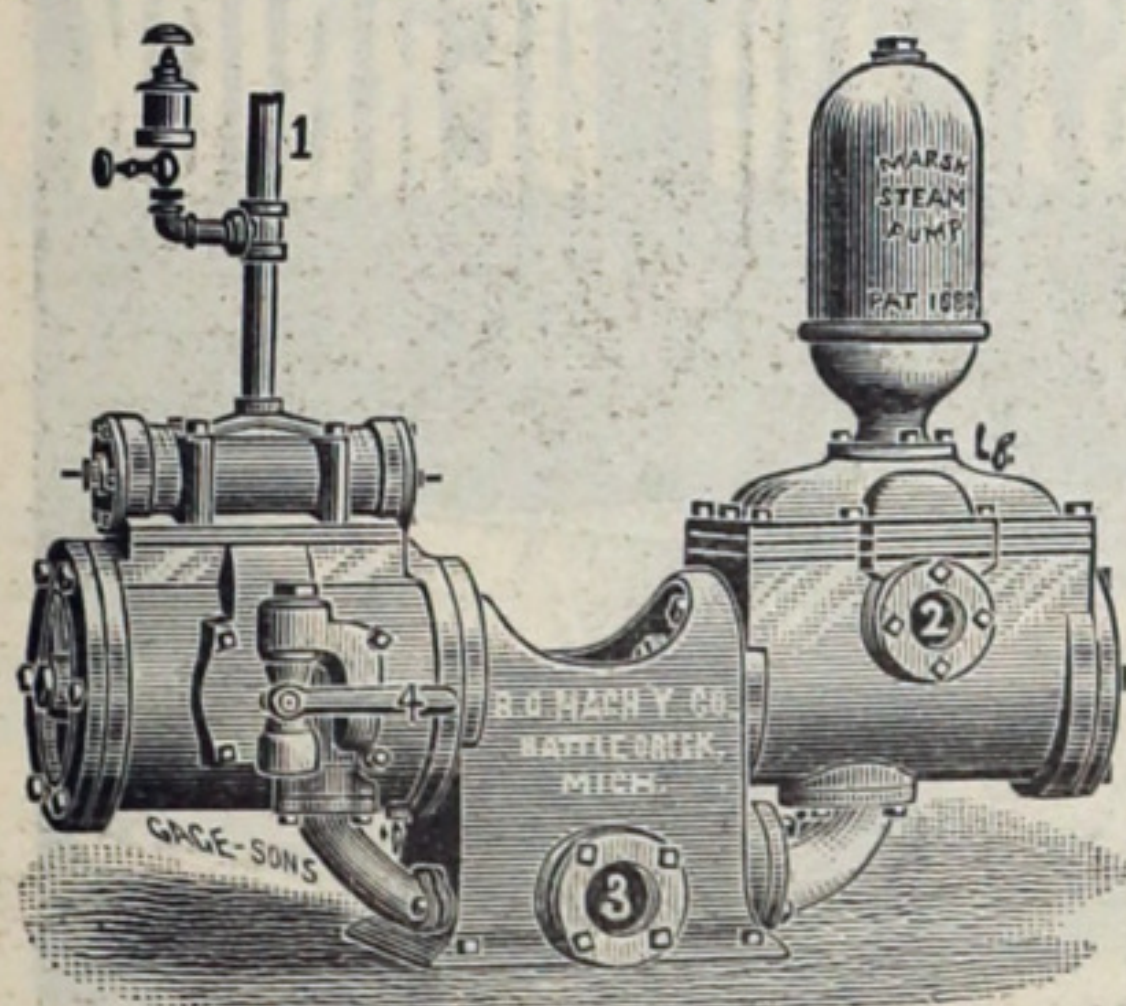
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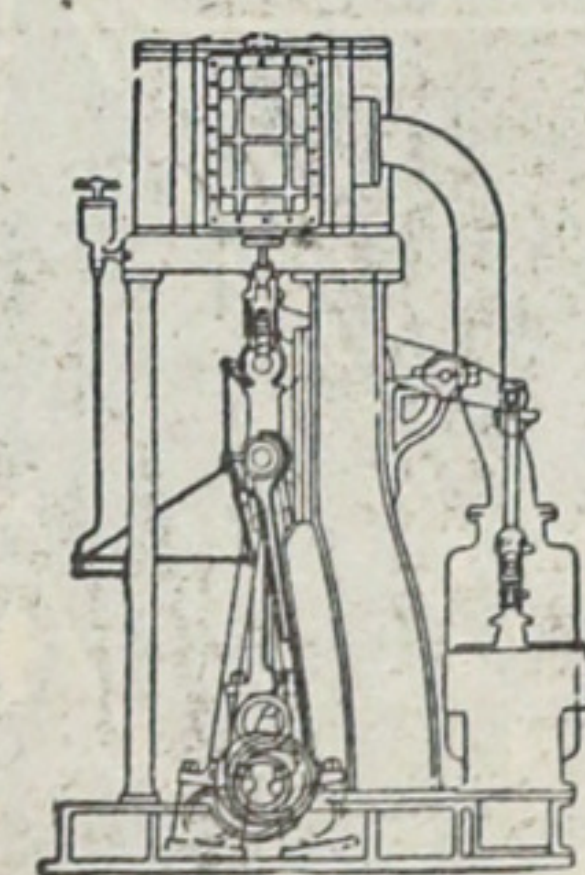
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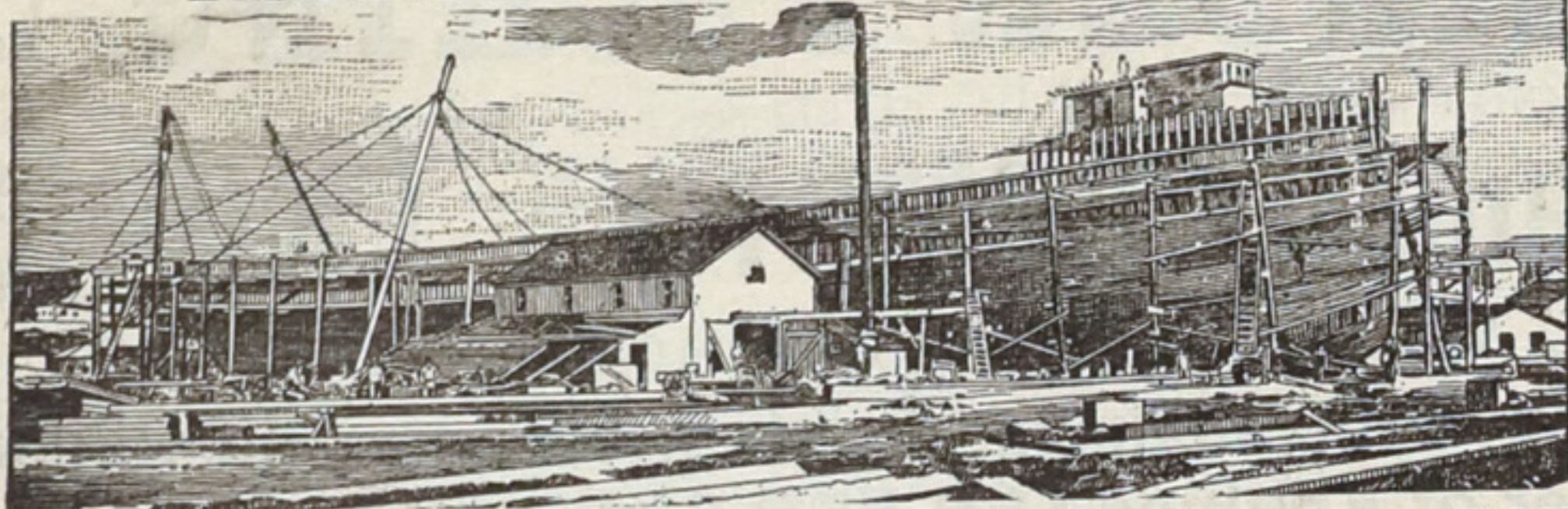
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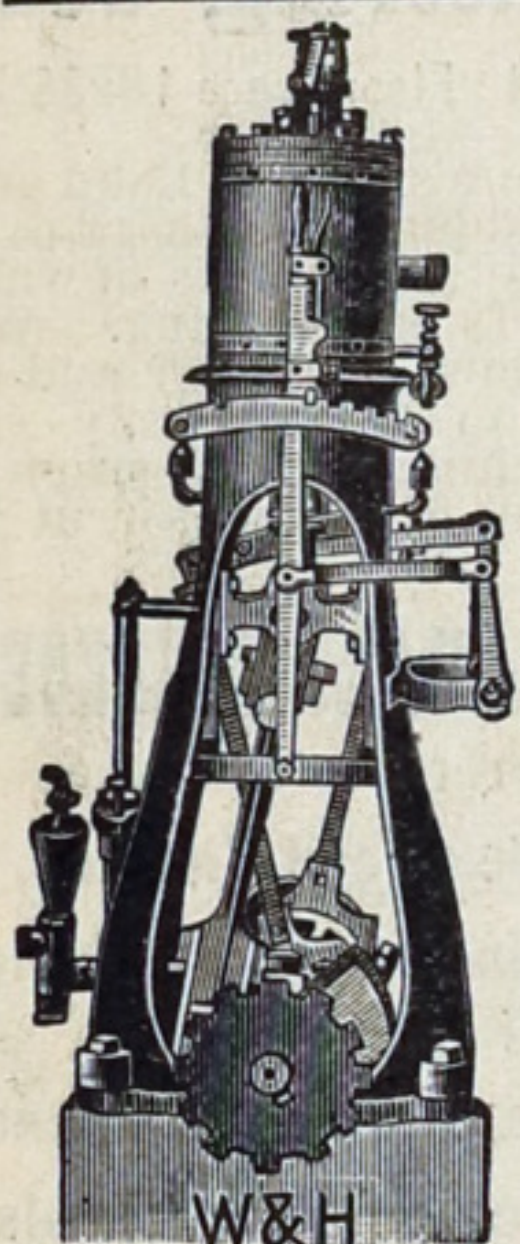
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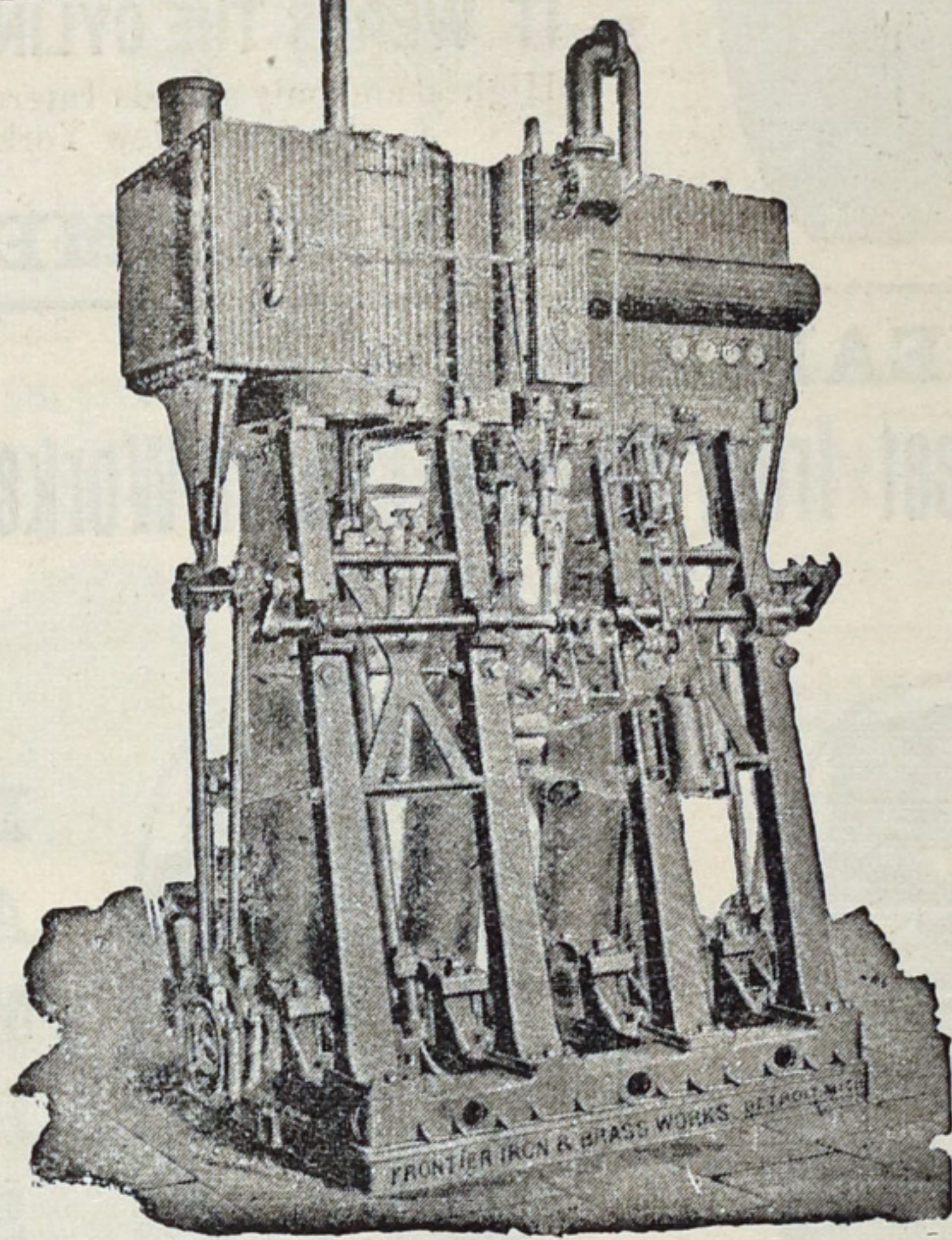
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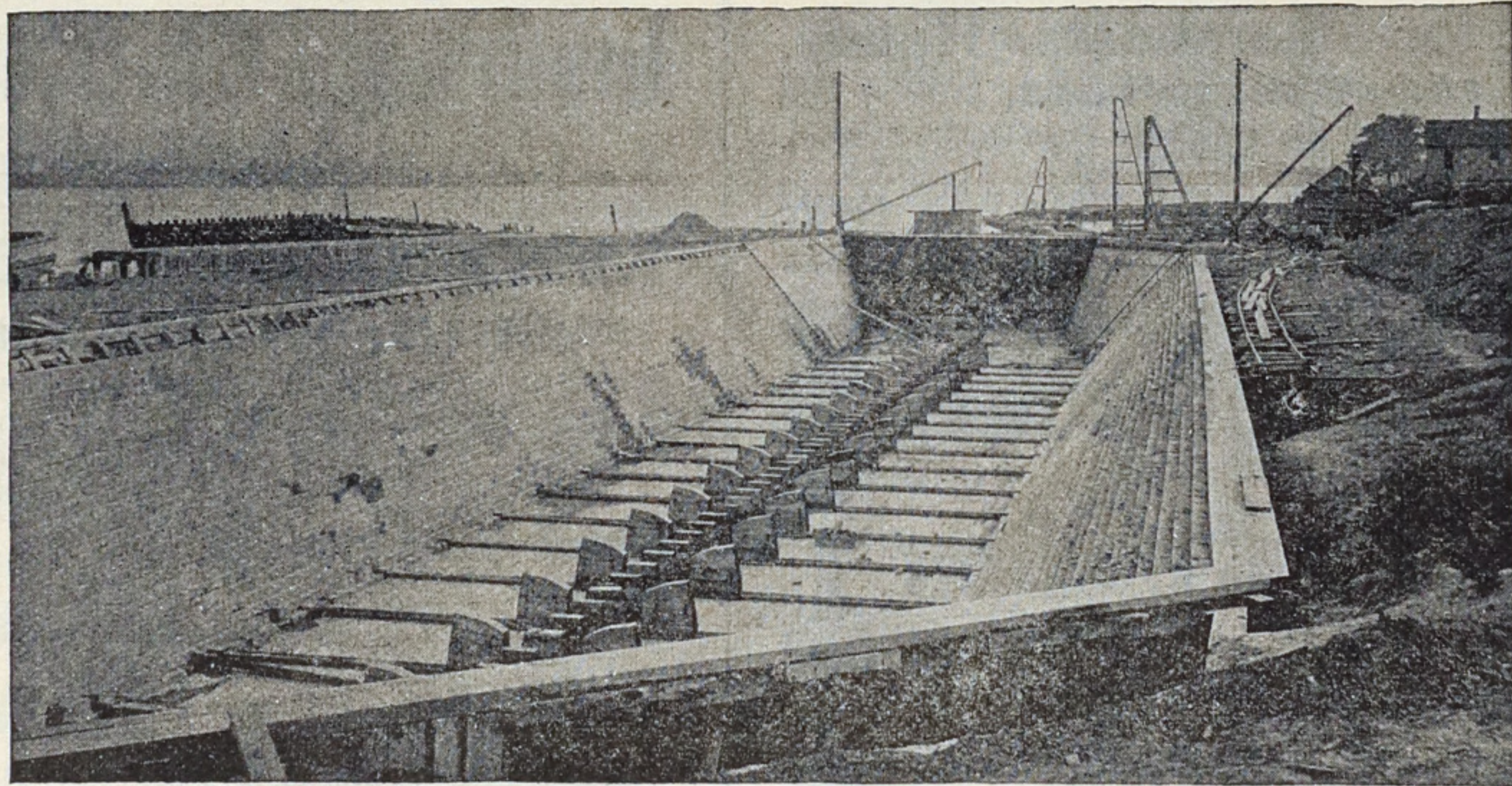
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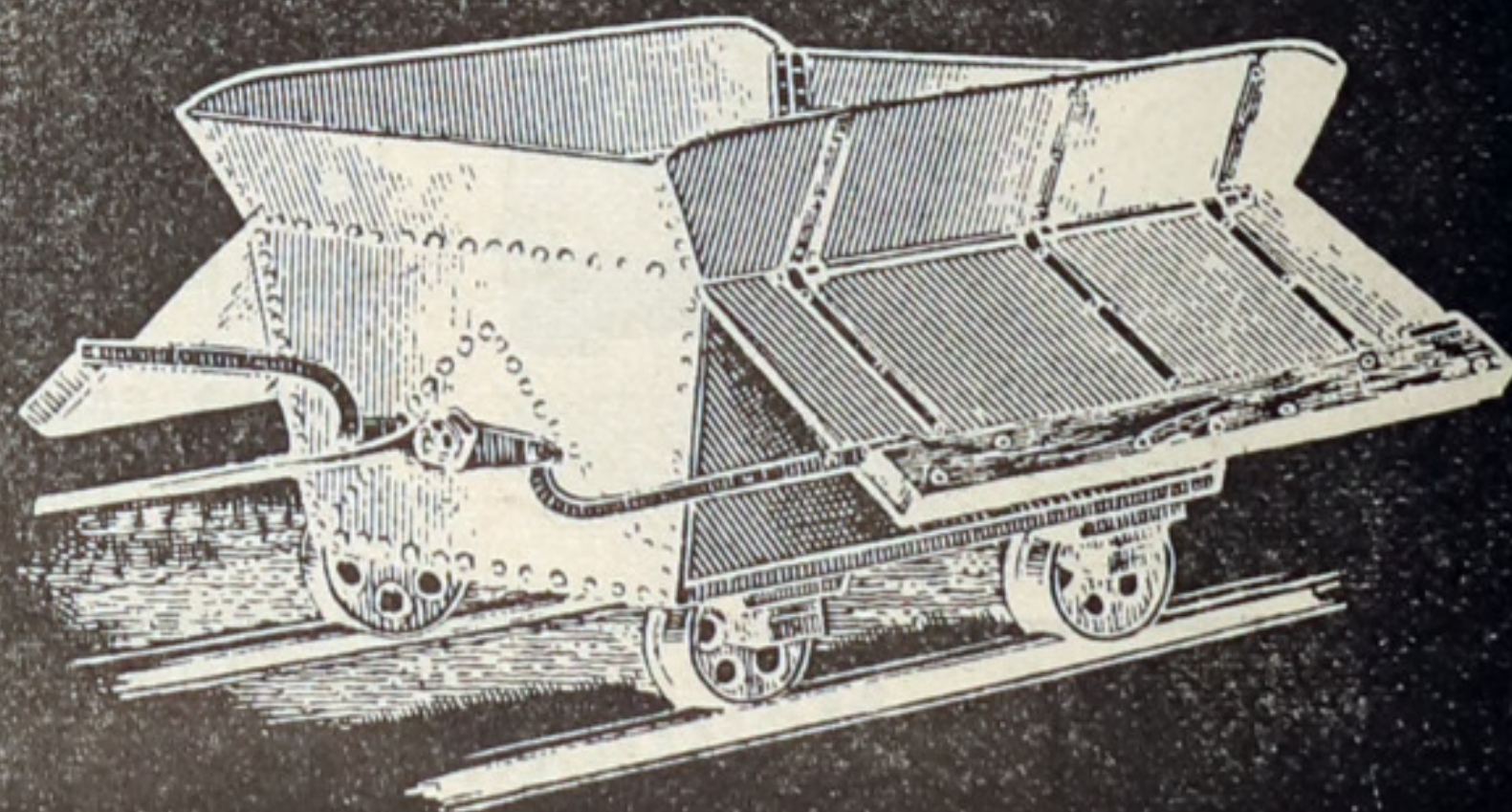
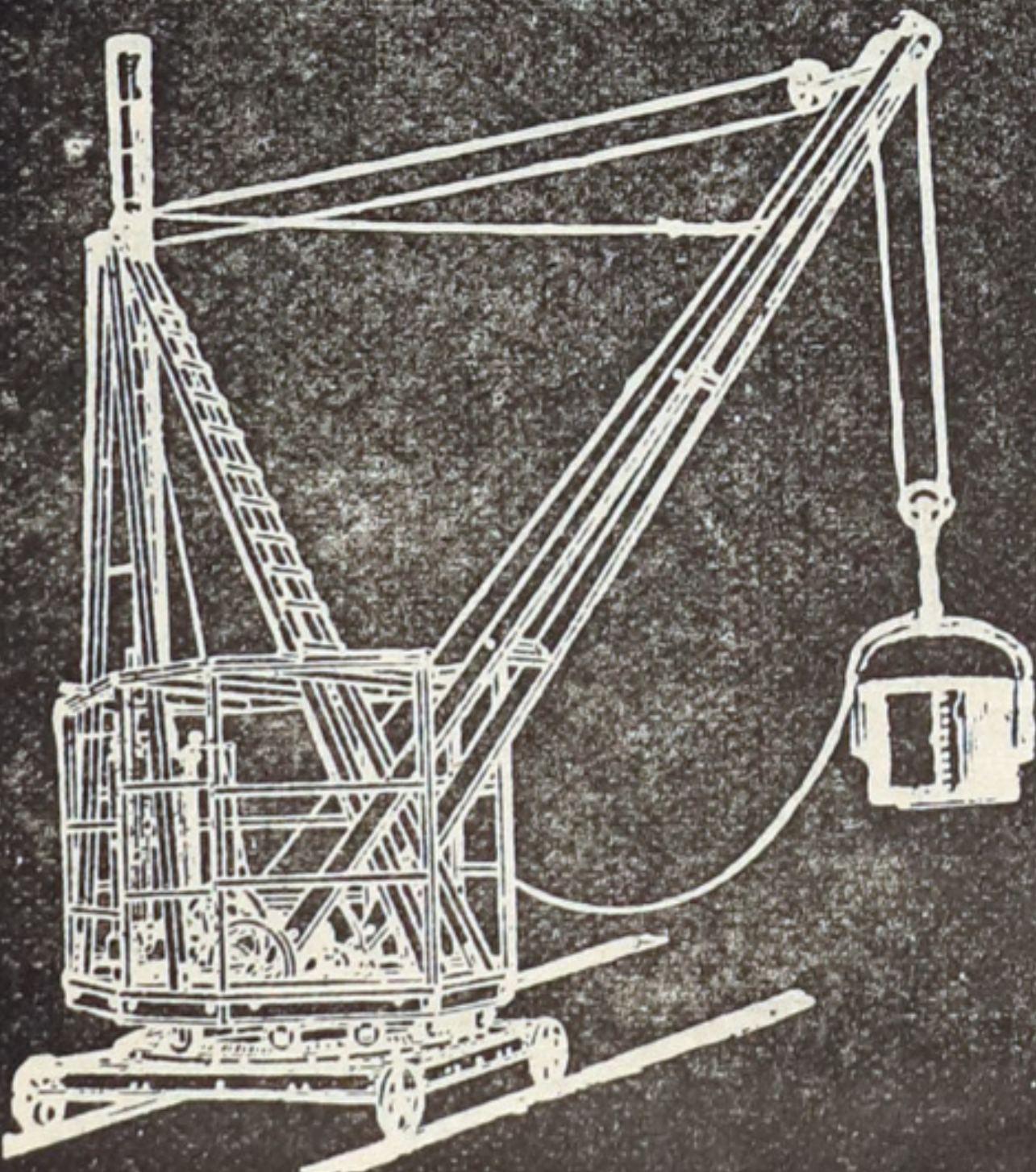
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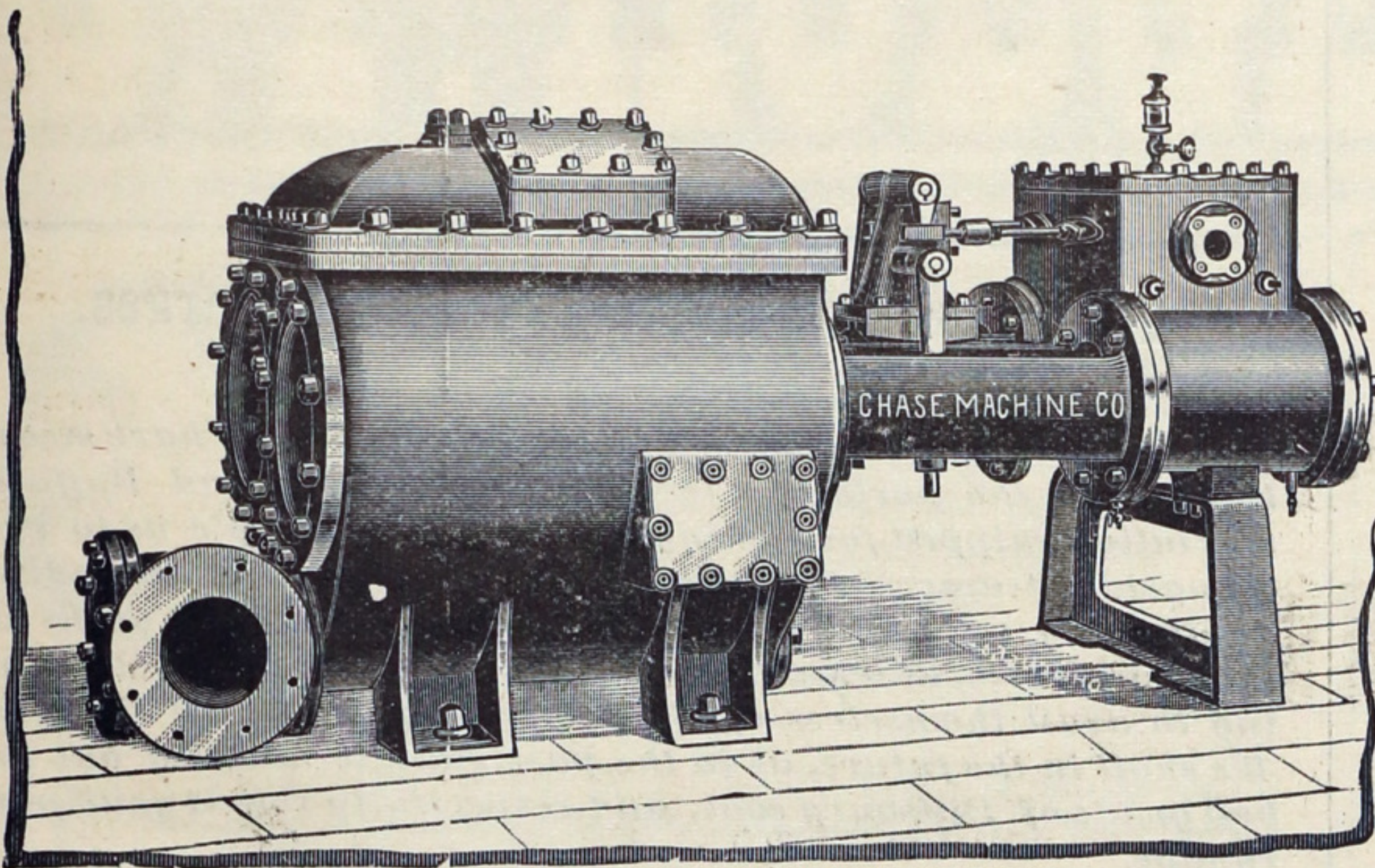
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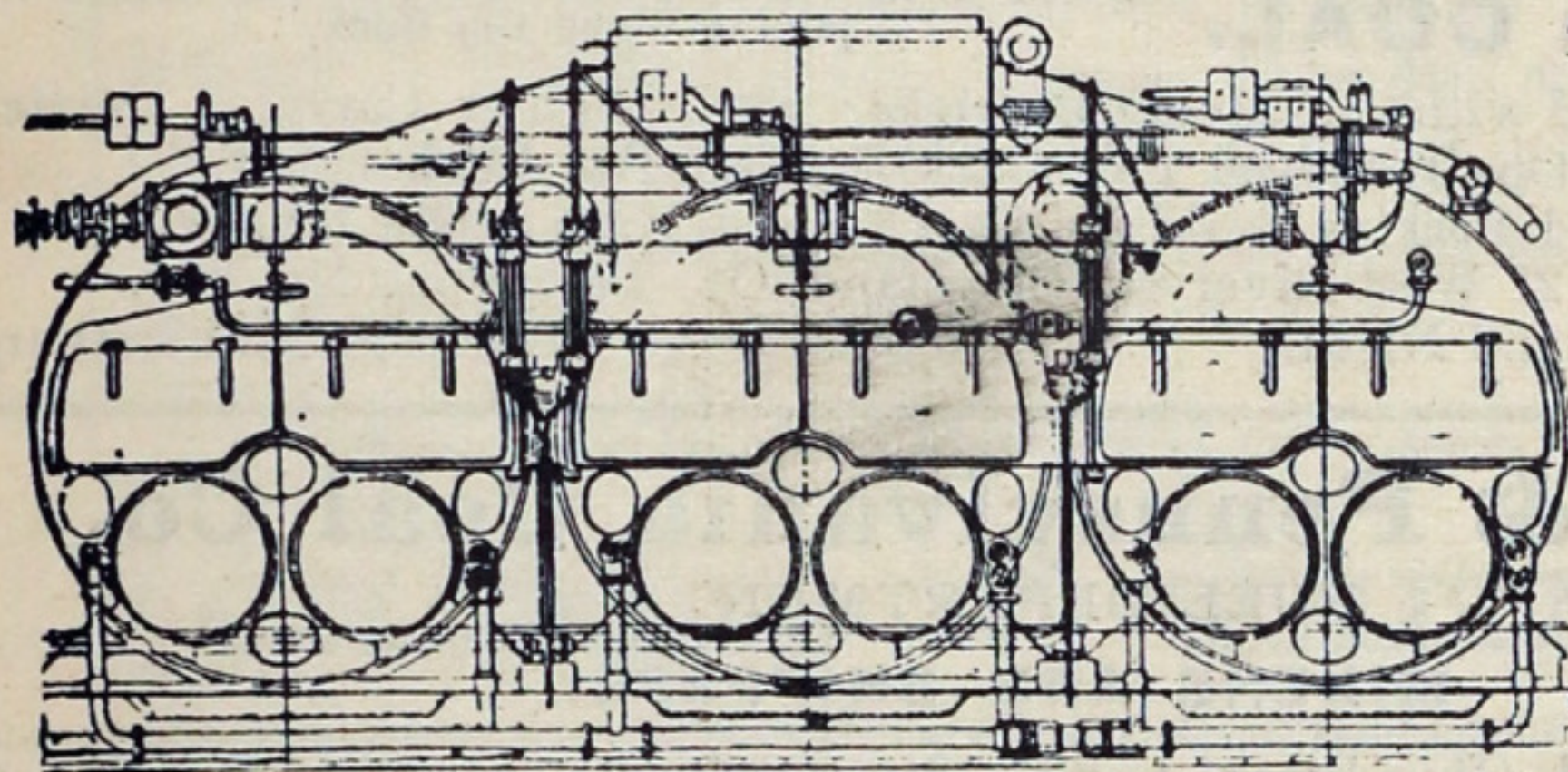
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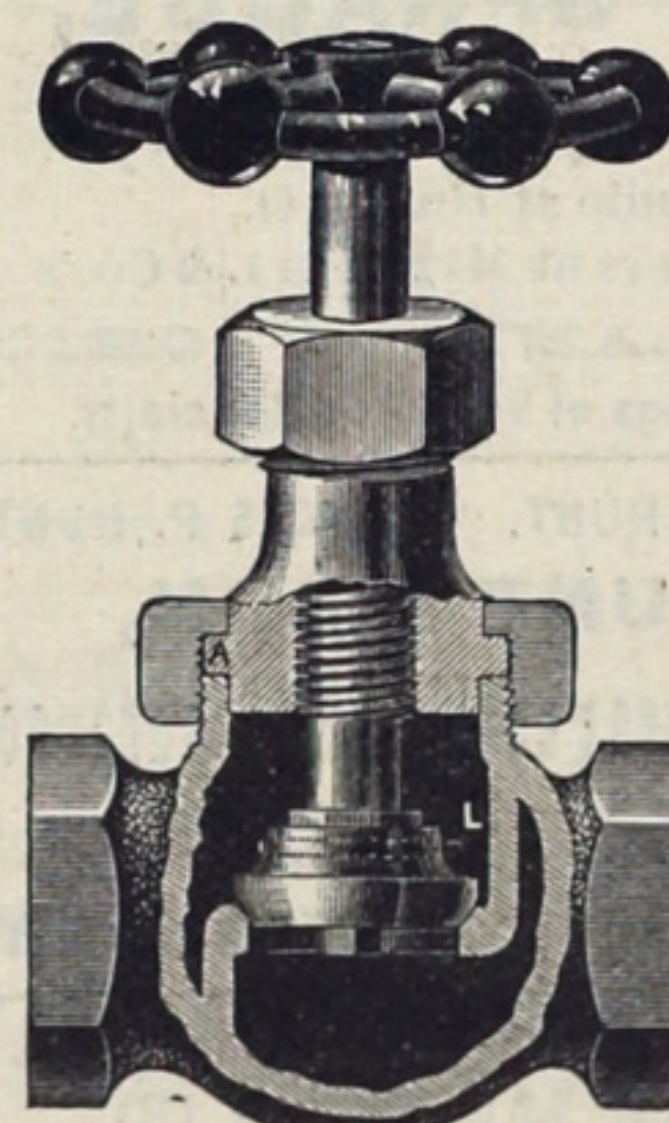
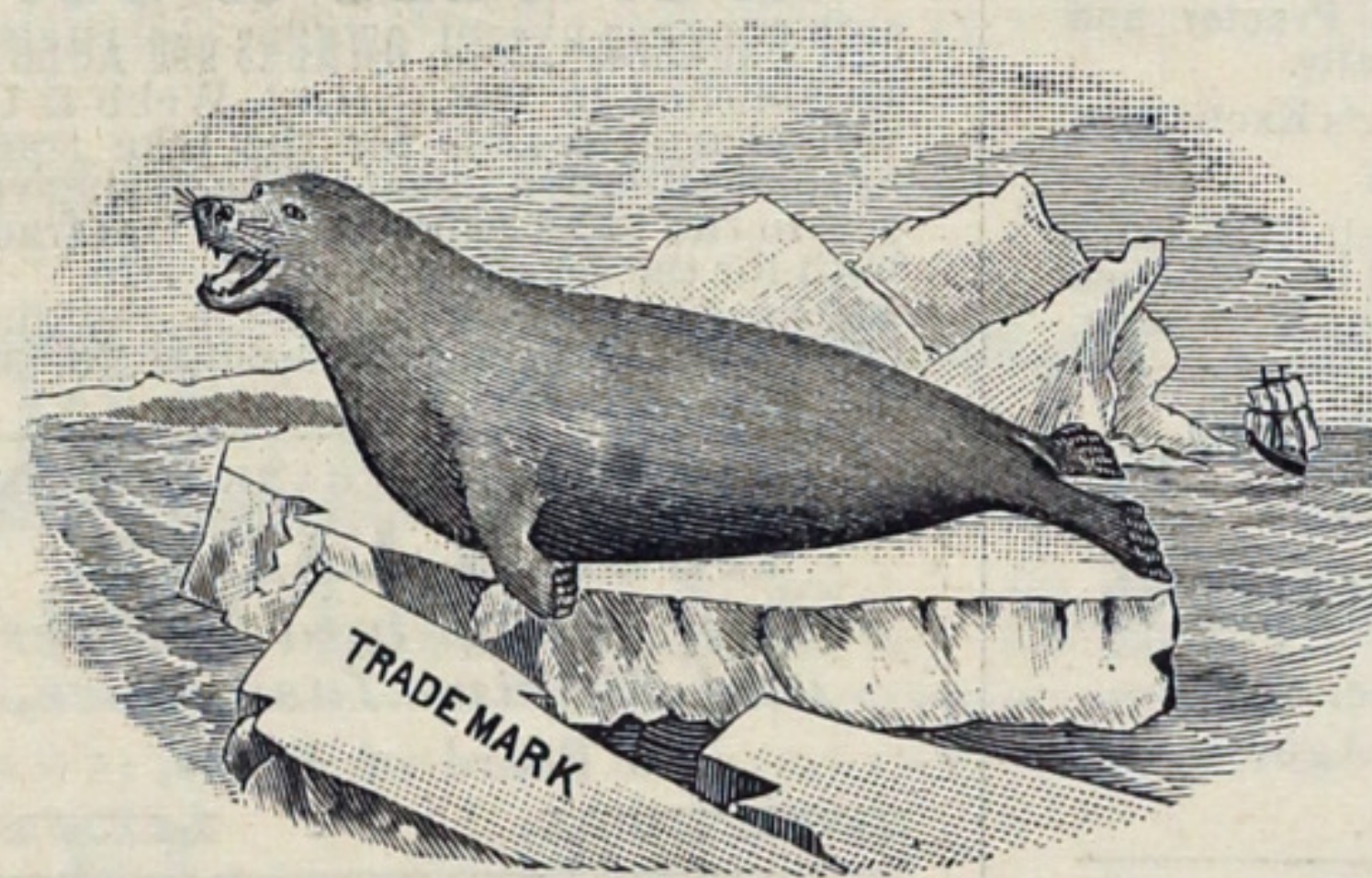
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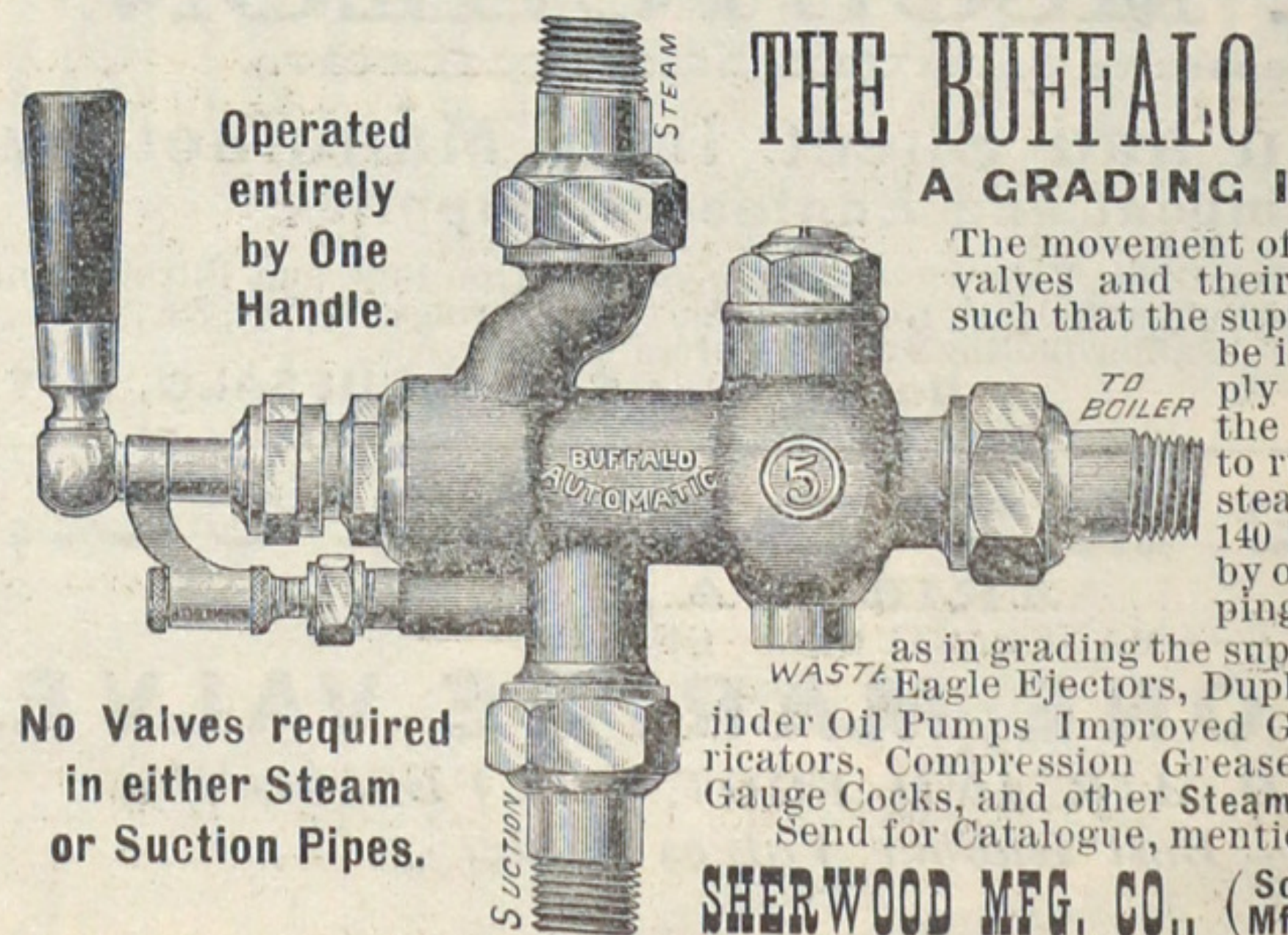
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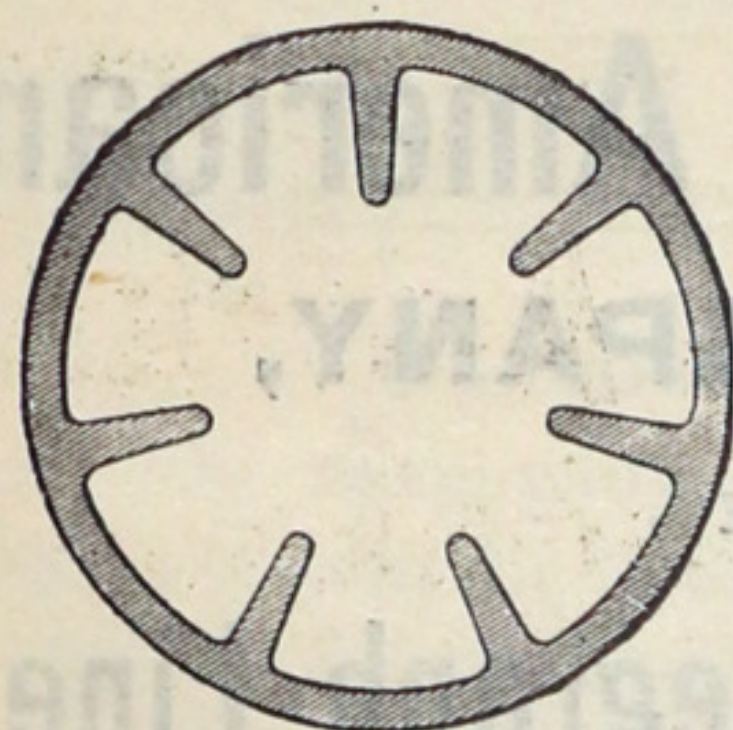
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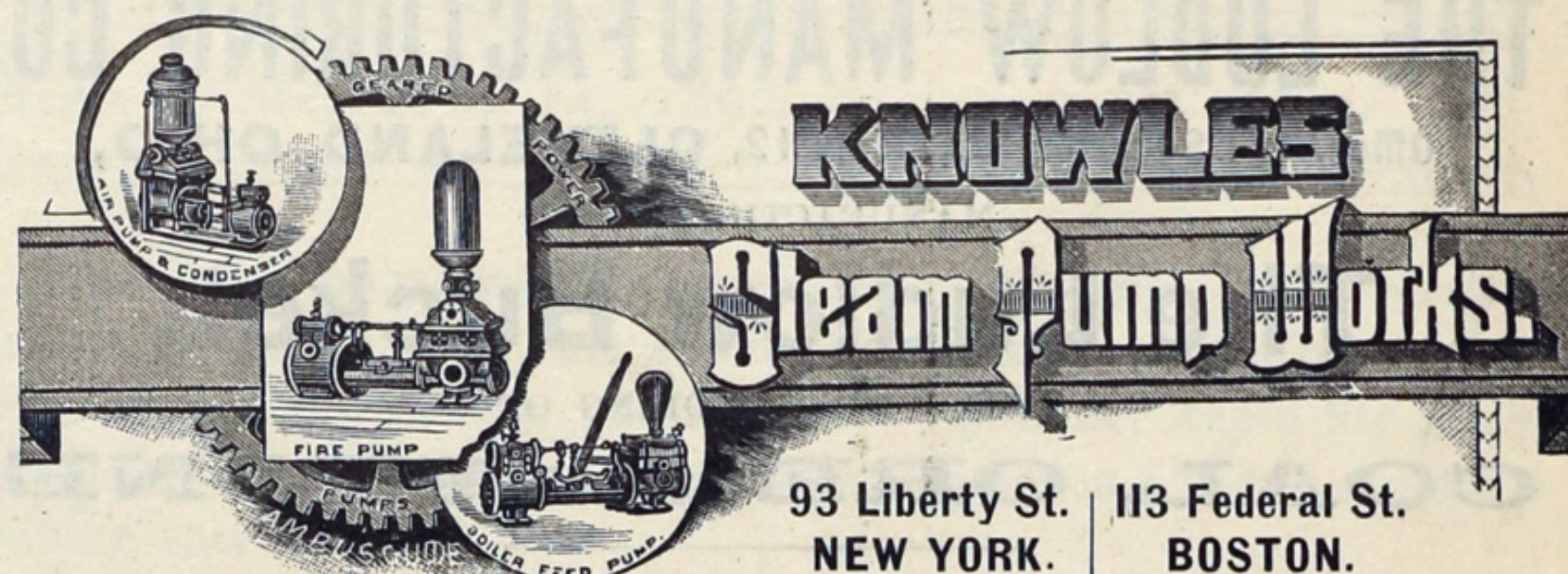
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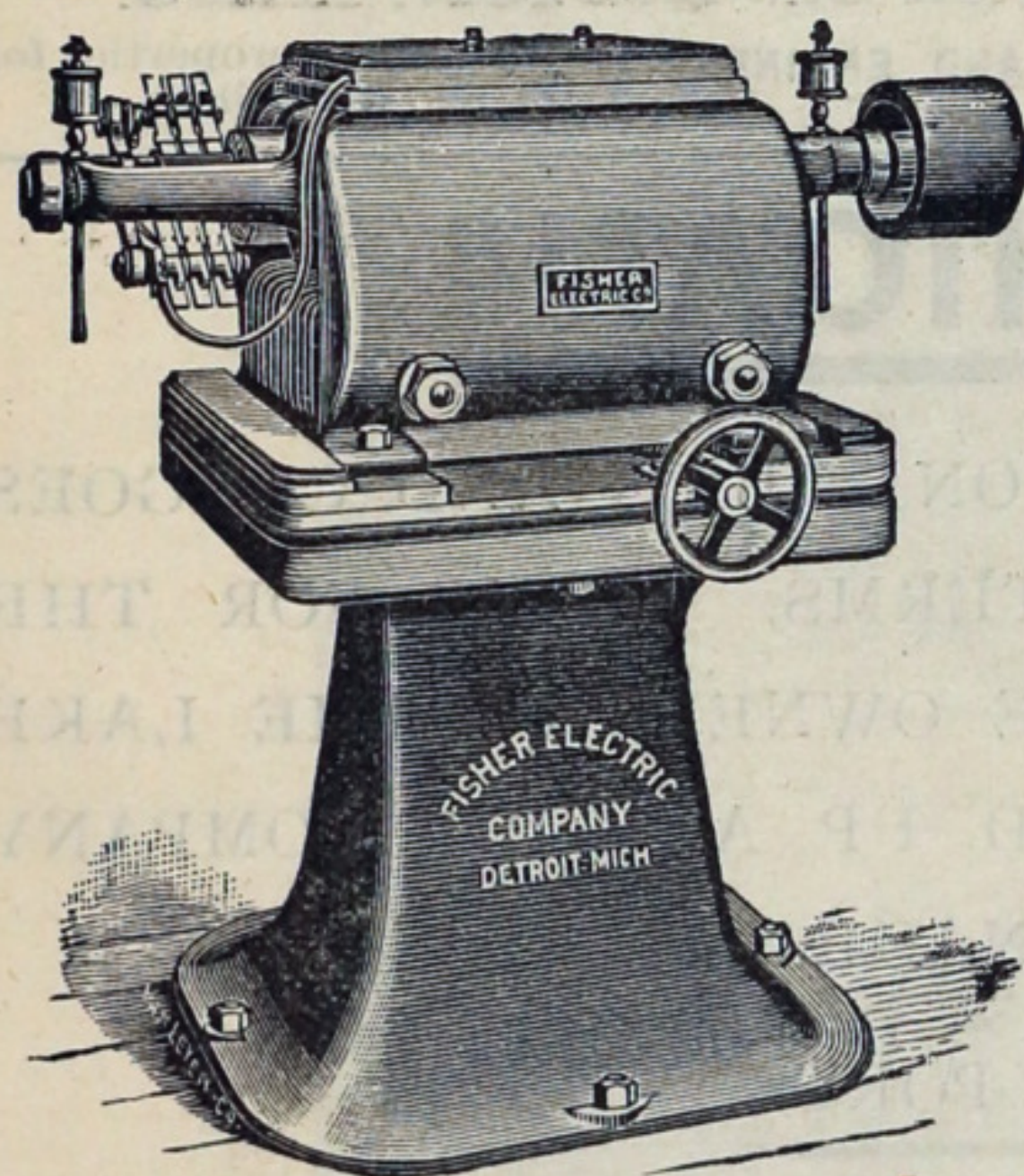
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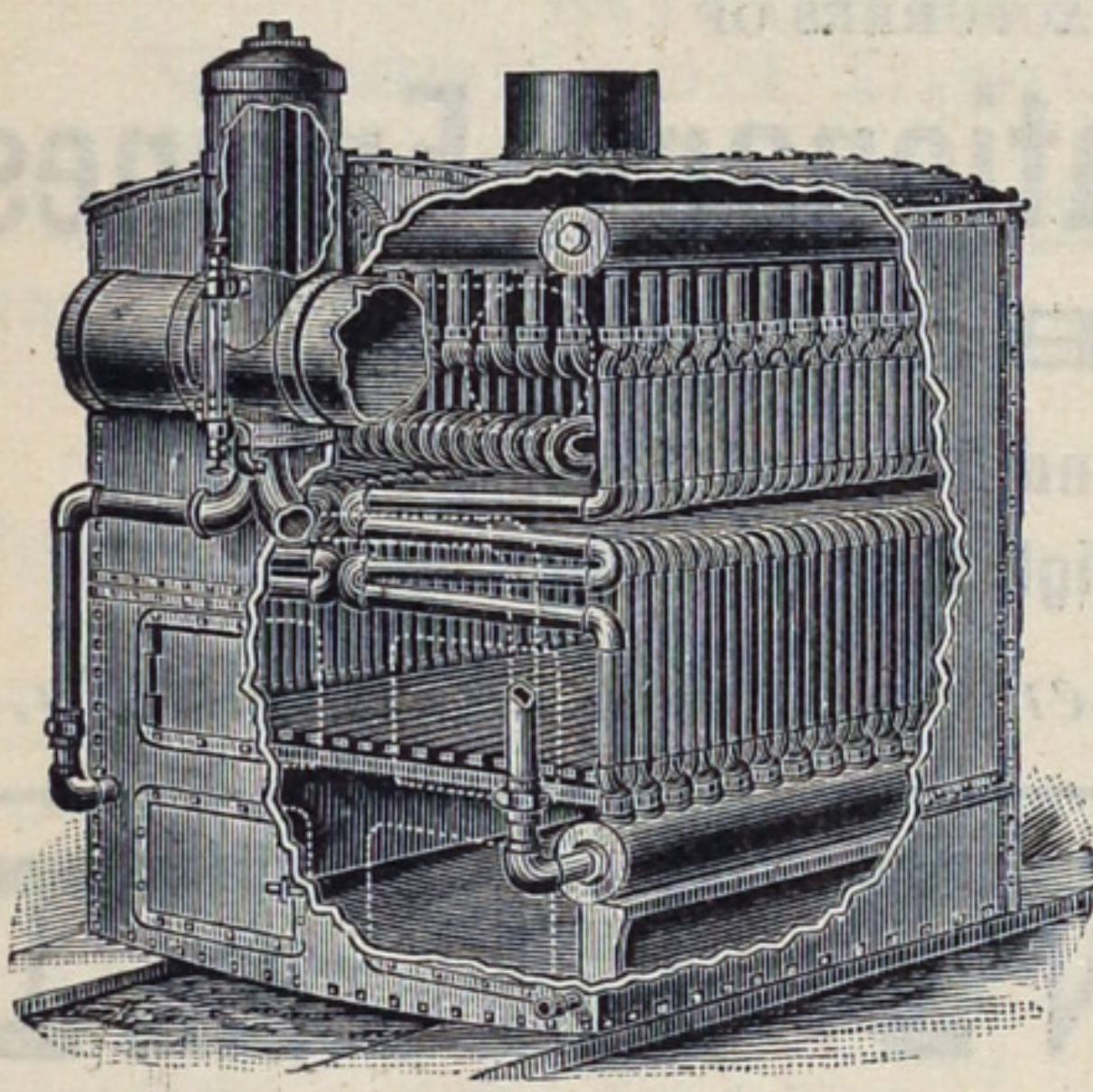
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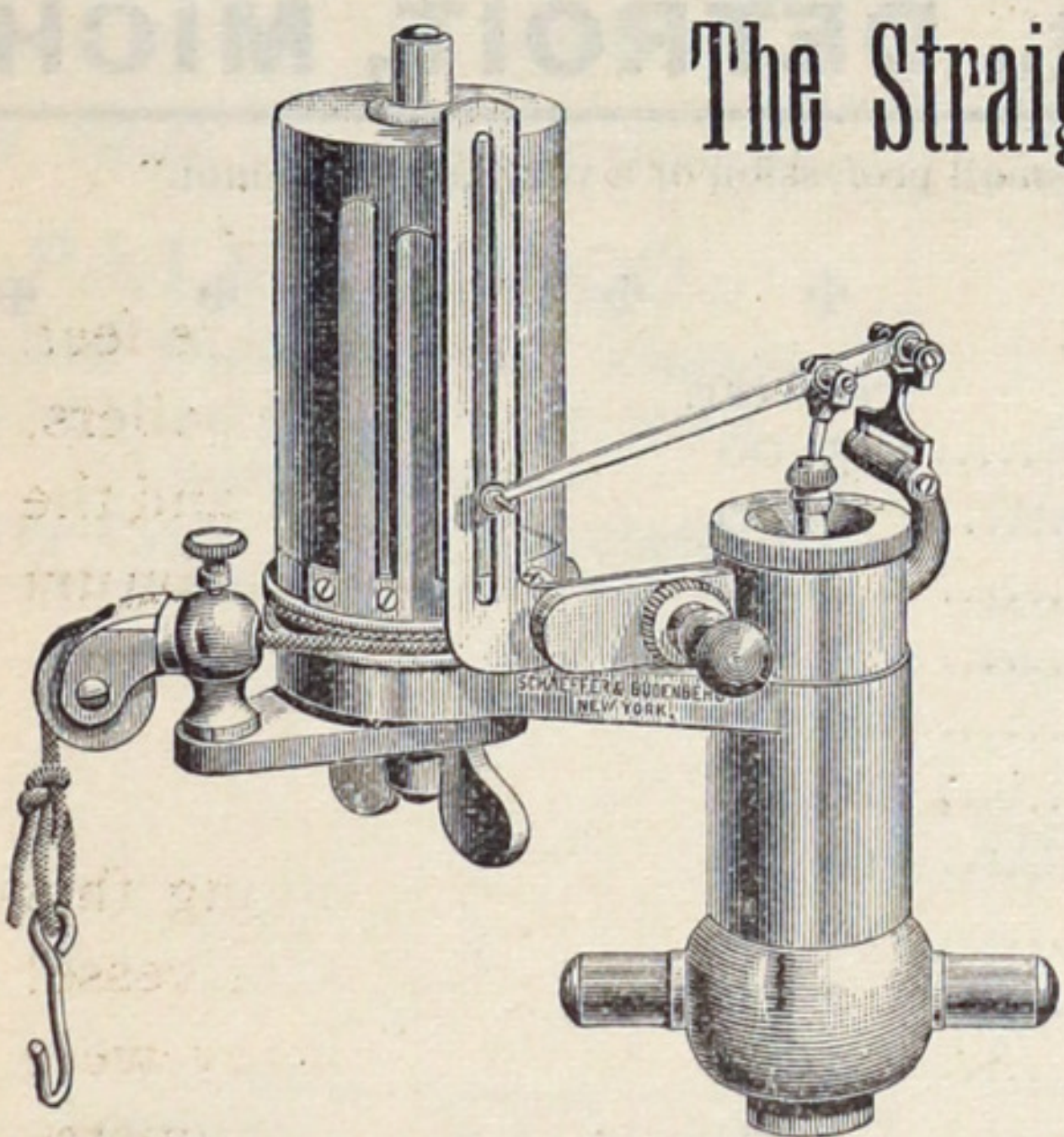
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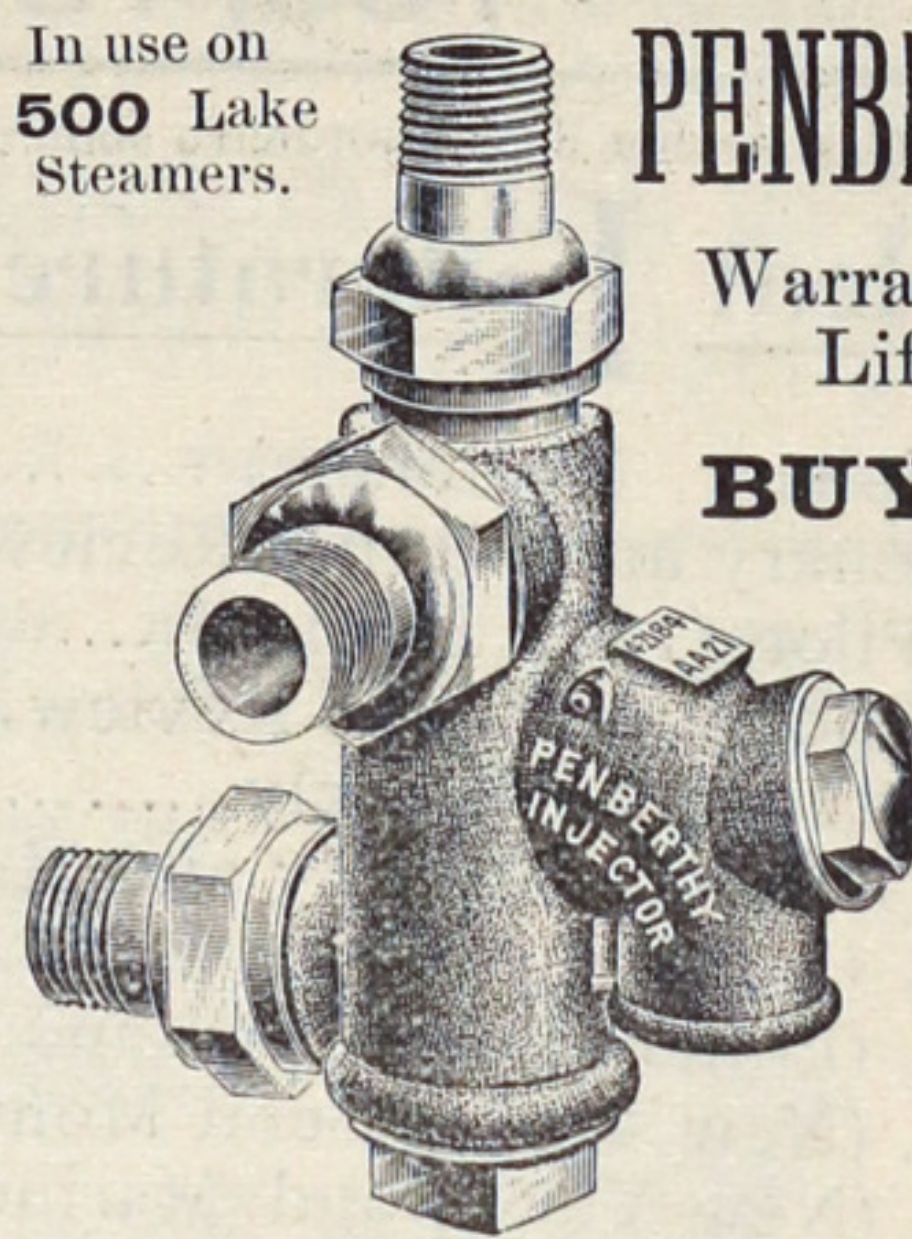
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